AFCTN Test Report 94-101

AFCTB-ID 94-075

Technical Publication Transfer Using:

O'Neil & Associates' Data Supporting:

ESC/MSL MILSTAR Program
T O 31R2-2U-433

(Contract #F19628-89-C-0131)

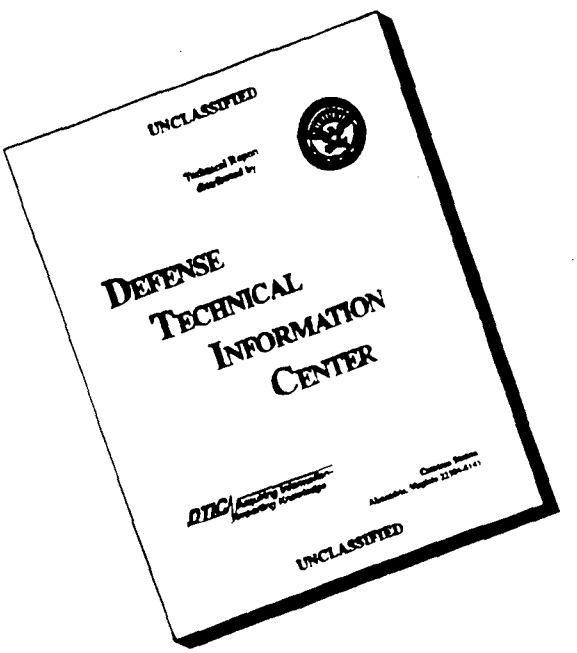
MIL-STD-1840A
MIL-D-28000A (IGES)
MIL-M-28001B (SGML)
MIL-R-28002A (Raster)
MIL-D-28003 (CGM)

Quick Short Test Report

02 July 1994

Prepared for
Electronic Systems Center
Air Force CALS Program Office
HQ ESC/AV-2
4027 Colonel Glenn Hwy Suite 300
Dayton OH 45431-1672

DISCLAIMER NOTICE



THIS DOCUMENT IS BEST QUALITY AVAILABLE. THE COPY FURNISHED TO DTIC CONTAINED A SIGNIFICANT NUMBER OF PAGES WHICH DO NOT REPRODUCE LEGIBLY.

Technical Publication Transfer Using:
O'Neil & Associates' Data
Supporting:
ESC/MSL's MILSTAR Program
TO 31R2-2U-433

(Contract #F19628-89-C-0131)

MIL-STD-1840A
MIL-D-28000A (IGES)
MIL-M-28001B (SGML)
MIL-R-28002A (Raster)
MIL-D-28003 (CGM)

Quick Short Test Report

20 June 1994

Prepared By
Air Force CALS Test Bed
Wright-Patterson AFB, OH 45433

AFCTB Contact
Gary Lammers
(513) 427-2295

AFCTN Contact
Mel Lammers
(513) 427-2295

DISCLAIMER

This document was prepared as an account of the work sponsored by the Air Force. Neither the United States Government, the Air Force, nor any of their employees makes any warranty, express or implied, or assumes any legal liability or responsibility for the accuracy, completeness, or usefulness of any information, apparatus, product, or process disclosed, nor represents that its use would not infringe on privately owned rights. Reference herein to any specific commercial products, process, or service by trade name, trademark, manufacturer, or otherwise, does not necessarily constitute or imply its endorsement, recommendation, or favoring by the United States Government or the Air Force. The views and opinions of authors expressed herein do not necessarily state or reflect those of the United States Government or the Air Force, and shall not be used for advertising or product endorsement purposes.

Available to the public from the
National Technical Information Service
U.S. Department of Commerce
5285 Port Royal Road
Springfield, VA 22161

This report and those involved in its preparation do not endorse any product, process, or company stated herein. Use of these means by anyone does not imply certification by the Air Force CALS Test Network (AFCTN).

Air Force CALS Test Bed

Notification of Test Results

20 June 1994

This notice documents the results of an Air Force CALS Test Bed (AFCTB) Quick Short Test Report (QSTR) evaluation of data submitted by:

O'Neil & Associates, Inc.

Identified as follows:

Title:	**Technical Publication T O 31R2-2U-433**
Program:	**MILSTAR**
Program Office:	**ESC/MSL**
Contract No.:	**F19628-89-C-0131**
QSTR No.:	**AFCTB-ID 94-075**

Received on the following media: **9-Track Tape**

The results of the QSTR evaluation are as follows:

MIL-STD-1840A Standard	**Pass**
MIL-STD-1840A Media Format:	**Pass**
MIL-D-28000A IGES:	**Pass**
MIL-M-28001B SGML:	**Pass**
MIL-R-28002A Raster:	**Pass**
MIL-D-28003 CGM:	**Pass**

Formal results with associated disclaimer are documented and available from the AFCTB.

Air Force CALS Test Bed
HQ ESC/AV-2P
4027 Colonel Glenn Highway, Suite 300
Dayton, OH 45431-1672
Phone: 513-257-3085 FAX: 513-257-5881

Contents

1. Introduction.....1

1.1. Background.....1

1.2. Purpose.....2

2. Test Parameters.....3

3. 1840A Analysis.....7

3.1. External Packaging.....7

3.2. Transmission Envelope.....7

3.2.1. Tape Formats.....7

3.2.2. Declaration and Header Fields.....8

4. IGES Analysis.....8

5. SGML Analysis.....11

6. Raster Analysis.....12

7. CGM Analysis.....14

8. Conclusions and Recommendations.....16

9. Appendix A - Tapetool Report Logs.....17

9.1. Tape Catalog.....17

9.2. Tape Evaluation Log.....18

9.3. Tape File Set Validation Log.....19

9.4. Other Tape Reading Logs.....23

10. Appendix B - Detailed IGES Analysis.....24

10.1. File D001Q030.....24

10.1.1. Parser/Verifier Log.....24

10.1.2. Parser Log - IGESWorks.....29

10.1.3. Output AutoCAD R12.....34

10.1.4. Output Cadkey v6.0.....35

10.1.5. Output CADLeaf.....36

10.1.6. Output IslandDraw.....37

10.1.7. Output IGESView.....38

10.1.8. Output Preview.....39

10.1.9. Output X-Change.....40

10.2. File D001Q031.....41

10.2.1. Parser/Verifer Log.....41

10.2.2. Post Processor Log - AutoCAD.....46

10.2.3. Output AutoCAD R12.....51

10.2.4. Output Cadkey v6.0.....52

10.2.5. Output CADLeaf.....53

10.2.6. Output IslandDraw.....54

10.2.7. Output IGESView.....55

10.2.8. Output X-Change.....56

11. Appendix C - Detailed SGML Analysis.....57

11.1. Parser Log.....57

11.1.1. First Pass Log.....57

11.2. Exoterica Validator Parser.....58

12. Appendix D - Detailed CGM Analysis.....59

12.1. File D001C001.....59

12.1.1. Parser Log MetaCheck.....59

12.1.2. validcgm Log.....61

12.1.3. Output Freelance.....62

12.1.4. Output Harvard Graphics.....63

12.1.5. Output HiJaak Pro.....64

12.1.6. Output Ventura Publisher.....65

1. Introduction

1.1 Background

The Department of Defense (DoD) Air Force Continuous Acquisition and Life-cycle Support (CALS) Test Network (AFCTN) is conducting tests of the military standard for the Automated Interchange of Technical Information, MIL-STD-1840A, and its companion suite of military specifications. The AFCTN is a DoD sponsored confederation of voluntary participants from industry and government managed by the Electronic Systems Center (ESC).

The primary objective of the AFCTN is to evaluate the effectiveness of the CALS standards for technical data interchange and to demonstrate the technical capabilities and operational suitability of those standards. Two general categories of tests are performed to evaluate the standards; formal and informal.

Formal tests are large and comprehensive, which follow a written test plan, require specific authorization from the DoD, and may take months to prepare, execute, and report.

Informal tests are quick and short, used by the AFCTN technical staff, to broaden the testing base. They include representative samples of the many systems and applications used by AFCTN participants. They also allow the AFCTN staff to gain feedback from many industry and government interpretations of the standards, to increase the base of participation in the CALS initiative, and respond to the many requests for help that come from participants. Participants take part voluntarily, benefit by receiving an evaluation of their latest implementation (interpretation) of the standards, interact with the AFCTN technical staff, gain experience using the standards, and develop increased confidence in them. The results of informal tests are reported in Quick Short Test Reports (QSTRs) that briefly summarize the standard(s) tested, the hardware and software used, the nature of the test, and the results.

1.2 Purpose

The purpose of the informal test, reported in this QSTR, was to analyze O'Neil & Associates' interpretation and use of the CALS standards in transferring technical publication data. O'Neil used its CALS Technical Data Interchange System to produce data, in accordance with the standards, and delivered it to the AFCTN technical staff on a 9-track magnetic tape.

2. Test Parameters

Test Plan: AFCTB 94-075

Date of Evaluation: 20 June 1997

Evaluator:
George Elwood
Air Force CALS Test Bed
DET 2 HQ ESC/AV-2P
4027 Colonel Glenn Hwy
Suite 300
Dayton OH 45431-1672

Data Originator:
Larry C. McKinley
O'Neil & Associates, Inc.
425 North Findlay Street
Dayton OH 45404-2203
(513) 461-1852

Data Description:
Technical Manual Test
- 1 Document Declaration file
- 4 Document Type Definitions (DTDs)
- 26 Initial Graphics Exchange Specification (IGES) files
- 1 Text/Standard Generalized Markup Language (SGML) file
- 6 Raster files
- 2 Computer Graphics Metafile (CGM) files

Data Source System:

1840

HARDWARE
386 PC

SOFTWARE
AFCTN Tapetool v1.2.10

IGES

HARDWARE
Xerox 7650 Pro Imager
Xerox 6085 Workstation

SOFTWARE

Xerox Expert Drafting v5.0
Conversion of IGES files v5.1

Text/SGML

HARDWARE

386 PC

SOFTWARE

WordPerfect Intellitag v1.2
Exoterica Validator v1.1

Raster

HARDWARE

Xerox 7650 Pro Imager
6085 Workstation

SOFTWARE

Xerox XTI v2.2
Xerox XPI Image Conversion 2.6

CGM

HARDWARE

HP/Apollo 425T

SOFTWARE

Auto-trol S5000/CGM Converter 1.4

Evaluation Tools Used:

MIL-STD-1840A (TAPE)

SUN 3/280

AFCTN ***Tapetool v1.2.10 UNIX***
XSoft ***CAPS/CALS v40.4***

MIL-D-28000 (IGES)

HP 735

Carberry ***CADLeaf Plus v3.1.2***
InterCAP ***X-Change v7.82***
Island Software ***IslandDraw v3.0***

SGI Indigo2

Cadkey ***Cadkey v6.0***
IGES Data Analysis (IDA) ***CALSView***
International TechneGroup Incorporated (ITI) ***IGES/Works v2.0.0***

Sun SparcStation 2
- Carberry ***CADLeaf Plus v3.1***
- IDA ***Parser/Verifier v92***
- IDA ***IGESView v3.05***
- ITI ***IGES/Works v1.3***
- Rosetta Technologies ***Prepare***
- Rosetta Technologies ***Preview v3.2***

PC 486/50
- AUTODESK ***AutoCAD R12/IGES v5.1***
- AUTODESK ***iges2ckm v6.0***

MIL-M-28001 (SGML)

PC 486/50
- Exoterica ***XGMLNormalizer v1.2e3.2***
- Exoterica ***Validator v2.0 ex1***
- McAfee & McAdam ***Sema Mark-it v2.3***
- Public Domain ***sgmls***

MIL-R-28002 (Raster)

HP 735
- AFCTN ***xrastb.hp***
- InterCAP ***X-Change v7.82***

SGI Indigo2
- IDA ***CALSView***

SUN SparcStation 2
- Carberry ***CADLeaf Plus v3.1***
- AFCTN ***validg4***
- AFCTN ***xrastb.sun4***
- IDA ***IGESView v3.0***

PC 486
- IDA ***IGESView Windows***
- Inset Systems ***HiJaak Pro***
- Expert Graphics ***RxHighlight v1.0***

MIL-D-28003 (CGM)

HP 735
- InterCAP ***X-Change v7.82***
- Island Software ***IslandDraw v3.0***

SGI Indigo 2
- IDA ***CALSView***

SUN SparcStation 2
- Carberry ***CADLeaf Plus v3.1***
- Island Software ***IslandDraw v4.0***

PC 486/50
Advanced Technology Center
(ATC) ***MetaCheck R 2.10***
ATC ***ForView 1.0***
Software Publishing Corporation
(SPC) ***Harvard Graphics v3.05***
Inset Systems ***HiJaak Pro***
Lotus ***Freelance v2.01***
Micrografx ***Designer v4.0***
Corel ***Ventura Publisher***

Standards Tested:

MIL-STD-1840A
MIL-D-28000A
MIL-M-28001B
MIL-R-28002A
MIL-D-28003

3. 1840A Analysis

3.1 External Packaging

The tape arrived at the Air Force CALS Test Bed (AFCTB) enclosed in a box in accordance with ASTM D 3951. The exterior of the box was marked with a magnetic tape warning label, as required by MIL-STD-1840A, para. 5.3.1.3.

The tape was enclosed in a barrier bag as required by MIL-STD-1840A, para. 5.3.1.2. Inspection of the tape reel showed the label indicating the recording density, as required by MIL-STD-1840A, para. 5.3.1. Enclosed in the box was a packing list showing all files recorded on the tape.

3.2 Transmission Envelope

The 9-track tape received by the AFCTB contained MIL-STD-1840A files. The files were named per the standard conventions.

3.2.1 Tape Formats

The tape was run through the AFCTN ***Tapetool v1.2.10*** utility. No errors were encountered while evaluating the contents of the tape labels.

The tape was read using XSoft's ***CAPS read1840A*** utility without any reported errors. However, this process resulted in the loss of three of the four DTDs. This occurred because the four DTDs had identical destination system document (dstdocid) record values, and the ***CAPS read-1840A*** utility renames the files using the dstdocid record values. (MIL-STD-1840A permits identical dstdocid values for multiple files; MIL-STD-1840B corrected this problem).

The physical structure of the tape meets the CALS MIL-STD-1840A requirements.

3.2.2 Declaration and Header Fields

No errors were reported in the Document Declaration file and data file headers. This portion of the tape meets the CALS MIL-STD-1840A requirements.

4. IGES Analysis

The tape contained 26 IGES files. Because of the number of files submitted, a 10 percent sample was selected. These files were evaluated using IDA's ***parser/verifier*** set for CALS Class I. This utility reported all files tested meet the specification defined in MIL-D-28000A. While no CALS errors were reported, all files had basic IGES errors and/or warnings. These deficiencies were disjointed line segments, or disjointed arcs. When viewed in a technical publication these deficiencies were not apparent; however, when these areas were examined in detail they could be seen. In some cases these disjointed lines were thickened to hide the gaps and overlapping arcs.

A more critical error, displayed during the evaluation, was the use of entity 230, the sectioned areas used to make the arrowheads and circular connect points. All files displayed this property. For the most part it did not cause a problem. However, in files Q030 and Q031 this entity made the files unusable in several applications. The connect points were joined together resulting in sets of triangle shapes on the image.

It was also noted that the basic leader line was thickened. This made the arrowhead look different than the rest of the lines. The log files from IDA's ***parser/verifier*** and AUTODESK's ***AutoCAD R12*** with the 5.1 translator, for files D001Q030 and Q031, are included in Appendix B, Section 10 of this report.

Each file was viewed by at lease one software application. The required basic conformance statement was found in the start section of the files. Files Q030 and Q031 were selected for the detailed analysis provided below.

The AFCTB has several tools for viewing IGES files. These tools are not used to generate a pass/fail but to report how commercially available software can handle the files. Many

of these products are used in the development of technical publications and are good indicators of usability. The use of these products is not an endorsement nor an indication of CALS capability. All operations were performed using the default settings.

The files were converted using AUTODESK's ***5.1 IGES translator*** in ***AutoCAD R12***. While no errors were reported, many warning statements were issued. The statements addressed discontinuous line segments and non-closed sectioned areas.

The selected files were translated using the AUTODESK's ***iges2ckm*** utility without a reported error. The resulting files were read and displayed. The added 230 entities were noted as missing. The connecting circles and some arrowheads were also missing.

The selected files were translated using Cadkey's ***ig2c*** utility. Both files had reported errors. The message was "entity types do not match @ parameter index xxxx" (2911 was one parameter reported). Found entity type 102 expected entity type 106. When this was checked the parameter and directory entities were correct. When displayed and printed the images appeared to be complete.

The files were converted using a utility available within the AFCTB, with no reported errors. The resulting files were read into Island Software's ***IslandDraw***, displayed and printed without a reported error. Files Q030 and Q031 displayed the sectioned area problem. These files would have been unusable in a technical publication. Also noted were text areas that appeared to be thickened.

The files were read using Carberry's ***CADLeaf*** software without a reported error. When displayed, the selected files showed sectioned areas between the connect points and arrowheads. By following the areas it was possible to see how the connect points had been completed.

The selected files were read and displayed using IDA's ***CALSView*** without a reported error. The sectioned areas were visible as filled in triangles. Also noted were several text areas that appeared to be thicken lines.

The selected files were read and displayed using IDA's ***IGESView*** and ***IGESView for Windows*** without a reported error. The sectioned areas appeared as cross hatched. All text appeared to be heavier then the rest of the image.

The selected files were read into ITI's ***IGESWorks*** without a reported error. Noted as missing were the connect points created using the 230 entity.

The selected files were read and displayed using InterCAPS' ***X-Change.*** No errors were noted.

The IGES files were converted using Rosetta Technologies' ***Prepare*** without a reported error. The resulting files were read into Rosetta Technologies' ***Preview***, displayed and printed. No errors were noted.

The IGES files meet the CALS MIL-D-28000A specification. However, the use of entity 230 to create the arrowheads and connect points, caused some systems to display unusable files. The reported IGES warnings were not critical for technical publication applications.

5. SGML Analysis

The tape contained one text and four DTD files. The basic DTD contained the graphic references and pointed to the basic ATOS DTD, which was named BSPEC. The BSPEC DTD pointed to two other subset DTDs; CALSFIGS (figure unique tags) and CALSTABS (table unique tags).

```
BASIC (G003) ---> BSPEC (G004)
                  ├> CALSTABS (G005)
                  └> CALSFIGS (G006)
```

The AFCTB has several parsers available for evaluating submitted DTD and text files. These tools are not used to generate a pass/fail but to report how commercially available software can handle the files. These products are used in the development of technical publications and are good indicators of usability. The use of these products is not an endorsement nor an indication of CALS capability. All operations were performed using the default settings unless specified in the report. Changes to DTD or text files required by each system are not documented in the report.

The text and DTD files were evaluated using a utility available within the AFCTB. This utility could not parse the DTD files without a critical error. The initial problems were within the marked sections in the BSPEC.DTD file.

The text and DTD files were evaluated using Exoterica's ***Validator exl*** parser. One warning, a mixed content model, was reported in the DTD.

```
<!-- **Warning** in "i:\94075\BSPEC.DTD" (entity "%BSPEC"), line 600,
     used in "\xgml\9475.dtd", line 176:
   An element with mixed content should permit data characters ("#PCDATA")
   everywhere.
   The element being declared is "WARNING".
   <!ELEMENT warning   - - (title?, (%txt; | para | list)+) >
```

The text and DTD files were tested using Exoterica's ***XGML-Normalizer*** parser. No errors and no warnings were issued by this utility.

The text and DTD files were evaluated using the Public Domain ***sgmls*** parser. No errors or warnings were issued by this program.

The text and DTD files meet the CALS MIL-M-28001B specification.

6. Raster Analysis

The tape contained six Raster files. All files were evaluated using the AFCTN ***validg4*** utility. This program reported all six files meet the CALS MIL-R-28002A specification.

The files were read into the AFCTN ***xrastb.sun4*** viewing utility. No problems were encountered, but it was noted that the images were white on black. This made viewing difficult. For technical publications graphic images are normally black on white. File D001R038 displayed as an unusable image. It was also noted that the images were electronic schematics. When these files were expanded, they became very large. The sizes ranged from 1.1 Megbytes to over 2.2 Megabytes. The IGES files included with this test contained more data, were smaller, and contained intelligent information.

The AFCTB has several tools for viewing Raster files. These tools are not used to generate a pass/fail but to report how commercially available software can handle the files. Many of these products are used in the development of technical publications and are good indicators of usability. The use of these products is not an endorsement nor an indication of CALS capability. All operations were performed using the default settings.

The files were converted using a utility available within the AFCTB, without a reported error. The resulting files were read into Island Software's ***IslandPaint*** and displayed. File R038 was displayed as a black image.

The Raster files were read into Carberry's ***CADLeaf*** software and displayed without a reported error. File R038 was displayed as a black image.

The files were read using IDA's ***CALSView*** and displayed without a reported error. File R038 was displayed as a black image.

The files were read and displayed using IDA's ***IGESView*** and ***IGESView for Windows*** without a reported error. File R038 was displayed as a black image.

The files were read and displayed using Inset Systems' ***HiJaak for Windows*** without a reported error. File R038 was displayed as a black image.

The files were read and displayed using InterCAP's ***X-Change*** without a reported error. File R038 was displayed as a black image.

The Raster files were converted using Rosetta Technologies' ***Prepare*** without a reported error. The resulting files were read into Rosetta Technologies' ***Preview*** and displayed. File R038 was displayed as a black image.

The Raster files were imported into Expert Graphics' ***Rx-Highlight*** and displayed without a reported error. File R038 was displayed as a black image.

The Raster files meet the CALS MIL-R-28002A specification. However, file D001R038 was displayed as a black image with nothing showing.

7. CGM Analysis

The tape contained two CGM files. The files were evaluated using ATC's ***MetaCheck*** with CALS options. No CALS or CGM errors or warnings were reported by this utility.

The CGM files were evaluated using the beta AFCTN ***validcgm*** utility. This utility reported no errors in either file.

The AFCTB has several tools for viewing CGM files. These tools are not used to generate a pass/fail but to report how commercially available software can handle the files. Many of these products are used in the development of technical publications and are good indicators of usability. The use of these products is not an endorsement nor and indication of CALS capability. All operations were performed using the default settings.

The CGM files were converted using a utility available within the AFCTB, without a reported error. The resulting files were read into Island Software's ***IslandDraw v3.1*** and displayed. In file C001, the text font was noted in error with the word "CAUTION" extending beyond the symbol toward the right.

The files were read into Carberry's ***CADLeaf*** software and displayed. File C001 had a problem with the text extending beyond the graphics to the right.

The files were read into IDA's ***CALSView.*** File C001 had a text font problem with the text extending beyond the graphics to the right. The type font appeared to be wrong.

The files were imported into the Micrografx ***Designer*** without a reported error. File C001 displayed and printed correctly.

The files were read into ATC's ***ForView*** without a reported error. The text exceeded the length of the line to the right.

The files were imported into Lotus' ***Freelance*** and displayed. The text font in file C001 was incorrect. The text was displayed and printed in very small letters.

The files were imported into SPC's ***Harvard Graphics v3.05*** without a reported error. File C001 did not display the

line between the text and the graphics. The text exceeded the length of the graphics to the right.

The files were read into Inset Systems' ***HiJaak Pro*** without a reported error. File C001 had a problem in the text font. The text extended beyond the length of the line between the graphics and the text.

The files were imported directly into Island Software's ***IslandDraw v4.0*** without a reported error. The image appeared to be correct although the text was not centered on the line.

The files were read into InterCAP's ***X-Change*** without a reported error. The text font was in error, and the text exceeded the length of the line toward the right.

The files were imported into Corel's ***Ventura Publisher*** without a reported error. File C001 had a noted problem with the text. The displayed and printed text was very small and located on the left side of the line.

While both CGM files were reported without error most applications, in the AFCTB, had problems with the text in file C001. The text was normally too large and the words exceeded the length of the line to the right. The CGM files meet the CALS MIL-D-28003 specification.

8. Conclusions and Recommendations

The physical structure of the tape had no reported errors or warnings. The CALS headers were also correct. This portion of the tape meets the requirements defined in MIL-STD-1840A.

The IGES files had no reported CALS errors. All files reported basic IGES errors and/or warnings. These errors are not critical for files used in technical publications. The IGES files meet the CALS MIL-D-28000A specification.

The SGML files had no reported errors and meet the CALS MIL-M-28001B specification.

The Raster files meet the CALS MIL-R-28002A specification. However, file D001R038 contained unknown data.

The CGM files meet the CALS MIL-D-28003 specification, although most applications had problems with the text font in file C001.

The tape submitted by O'Neil & Associates, Inc. meets the CALS MIL-STD-1840A requirements.

9. Appendix A - Tapetool Report Logs

9.1 Tape Catalog

CALS Test Network Catalog Evaluation - Version 1.2; Release 10 (C)

Standards referenced:
MIL-STD-1840A (1987) - Automated Interchange of Technical Information
ANSI X3.27 (1987) - File Structure and labeling of Magnetic Tapes for Information Interchange
ANSI X3.4 (1986) - Coded Character Sets - 7 Bit ASCII

Mon Jun 20 12:18:06 1994

MIL-STD-1840A File Catalog

File Set Directory: /cals/u1210/Set075

Page: 1

File Name	File Type	Record Format/ Length	Block Length/Total	Selected/ Extracted
D001	Document Declaration	D/00260	02048/000001	Extracted
D001C001	CGM	F/00080	00800/000003	Extracted
D001C002	CGM	F/00080	00800/000003	Extracted
D001G003	DTD	D/00260	02048/000002	Extracted
D001G004	DTD	D/00260	02048/000013	Extracted
D001G005	DTD	D/00260	02048/000002	Extracted
D001G006	DTD	D/00260	02048/000002	Extracted
D001Q007	IGES	F/00080	02000/000324	Extracted

<<<<< PART OF LOG FILE REMOVED HERE >>>>>

File Name	File Type	Record Format/ Length	Block Length/Total	Selected/ Extracted
D001Q032	IGES	F/00080	02000/000080	Extracted
D001R033	Raster	F/00128	02048/000021	Extracted

<<<<< PART OF LOG FILE REMOVED HERE >>>>>

File Name	File Type	Record Format/ Length	Block Length/Total	Selected/ Extracted
D001R037	Raster	F/00128	02048/000021	Extracted
D001R038	Raster	F/00128	02048/000002	Extracted
D001T039	Text	D/00260	02048/000046	Extracted

Catalog Process terminated normally.

9.2 Tape Evaluation Log

```
CALS Test Network Tape Evaluation - Version 1.2; Release 10 (C)
  Standards referenced:
    ANSI X3.27 (1987) - File Structure and labeling of Magnetic Tapes
                        for Information Interchange
    ANSI X3.4 (1986) - Coded Character Sets - 7 Bit ASCII

Mon Jun 20 12:13:33 1994
ANSI Tape Import Log
Allocating tape drive /dev/rmt0...
/dev/rmt0 allocated.

VOL1ONA001                                                              4

  Label Identifier: VOL1
  Volume Identifier: ONA001
  Volume Accessibility:
  Owner Identifier:
  Label Standard Version: 4

HDR1D001             ONA00100010001000000 94168 00000 000000

  Label Identifier: HDR1
  File Identifier: D001
  File Set Identifier: ONA001
  File Section Number: 0001
  File Sequence Number: 0001
  Generation Number: 0000
  Generation Version Number: 00
  Creation Date:  94168
  Expiration Date:  00000
  File Accessibility:
  Block Count: 000000
  Implementation Identifier:

HDR2D0204800260                                  00
                          <<<<< PART OF LOG FILE REMOVED HERE >>>>>

************ Tape Mark ***************
************ Tape Mark ***************
############ End of Volume ONA001 ###############
############ End Of Tape File Set ###############

Deallocating /dev/rmt0...
Tape Import Process terminated normally.
```

9.3 Tape File Set Validation Log

```
CALS Test Network File Set Evaluation - Version 1.2; Release 10 (C)

  Standards referenced:
    MIL-STD-1840A (1987) - Automated Interchange of Technical Information

Mon Jun 20 12:18:06 1994

MIL-STD-1840A File Set Evaluation Log

File Set: Set075

Found file: D001
Extracting Document Declaration Header Records...
Evaluating Document Declaration Header Records...

srcsys: O'Neil & Assoc. CAGE 83007
srcdocid: TO_31R2-2U-433
srcrelid: NONE
chglvl: ORIGINAL
dteisu: 19940606
dstsys: RAYTHEON CAGE
dstdocid: TO_31R2-2U-433
dstrelid: NONE
dtetrn: 19940617
dlvacc: NONE
filcnt: C2,G4,Q26,R6,T1
ttlcls: UNCLASSIFIED
doccls: UNCLASSIFIED
doctyp: Technical Publication
docttl: NONE

Found file: D001C001
Extracting CGM Header Records...
Evaluating CGM Header Records...

srcdocid: TO_31R2-2U-433
dstdocid: TO_31R2-2U-433
txtfilid: W
figid: INTRO-CAUTION-ESD
srcgph: ESDCAU
doccls: UNCLASSIFIED
notes: NONE
```

```
Saving CGM Header File: D001C001_HDR
Saving CGM Data File: D001C001_CGM
Found file: D001C002
Extracting CGM Header Records...
Evaluating CGM Header Records...

srcdocid: TO_31R2-2U-433
dstdocid: TO_31R2-2U-433
txtfilid: W
figid: <caution><symbol>
srcgph: TXTRESD
doccls: UNCLASSIFIED
notes: NONE

Saving CGM Header File: D001C002_HDR
Saving CGM Data File: D001C002_CGM

Found file: D001G003
Extracting DTD Header Records...
Evaluating DTD Header Records...

srcdocid: TO_31R2-2U-433
dstdocid: TO_31R2-2U-433
notes: 1 OF 4, Document-specific DTD

Saving DTD Header File: D001G003_HDR
Saving DTD Data File: D001G003_DTD

Found file: D001G004
Extracting DTD Header Records...
Evaluating DTD Header Records...

srcdocid: TO_31R2-2U-433
dstdocid: TO_31R2-2U-433
notes: 2 OF 4, BSPEC.DTD (main DTD)

Saving DTD Header File: D001G004_HDR
Saving DTD Data File: D001G004_DTD

Found file: D001G005
Extracting DTD Header Records...
Evaluating DTD Header Records...

srcdocid: TO_31R2-2U-433
dstdocid: TO_31R2-2U-433
notes: 3 OF 4, CALSFIGS.SGM
```

```
Saving DTD Header File: D001G005_HDR
Saving DTD Data File: D001G005_DTD

Found file: D001G006
Extracting DTD Header Records...
Evaluating DTD Header Records...

srcdocid: TO_31R2-2U-433
dstdocid: TO_31R2-2U-433
notes: 4 OF 4, CALSTABS.SGM

Saving DTD Header File: D001G006_HDR
Saving DTD Data File: D001G006_DTD

Found file: D001Q007
Extracting IGES Header Records...
Evaluating IGES Header Records...

srcdocid: TO_31R2-2U-433
dstdocid: TO_31R2-2U-433
txtfilid: W
figid: 1-1
srcgph: M0401
doccls: UNCLASSIFIED
notes: NONE

Saving IGES Header File: D001Q007_HDR
Saving IGES Data File: D001Q007_IGS
```

<<<<< PART OF LOG FILE REMOVED HERE >>>>>

```
Found file: D001R033
Extracting Raster Header Records...
Evaluating Raster Header Records...

srcdocid: TO_31R2-2U-433
dstdocid: TO_31R2-2U-433
txtfilid: W
figid: FO-8(1OF3)
srcgph: T43339
doccls: UNCLASSIFIED
rtype: 1
rorient: 000,270
rpelcnt: 003900,002704
rdensty: 0300
notes: NONE
```

```
Saving Raster Header File: D001R033_HDR
Saving Raster Data File: D001R033_GR4

                              <<<<< PART OF LOG FILE REMOVED HERE >>>>>
Found file: D001T039
Extracting Text Header Records...
Evaluating Text Header Records...

srcdocid: TO_31R2-2U-433
dstdocid: TO_31R2-2U-433
txtfilid: W
doccls: UNCLASSIFIED
notes: NONE

Saving Text Header File: D001T039_HDR
Saving Text Data File: D001T039_TXT

Evaluating numbering scheme...
No errors were encountered during numbering scheme evaluation.
Numbering scheme evaluation complete.

Checking file count...
No errors were encountered during file count verification.
File Count verification complete.

No errors were encountered in Document D001.

No errors were encountered in this File Set.

MIL-STD-1840A File Set Evaluation Complete.
```

9.4 Other Tape Reading Logs

```
/cals/caps/Bin/read1840A: --- Read declaration file 'D001     ' ---
/cals/caps/Bin/read1840A: writing data file 'aftb9475/TO31R2-2U-433/
ESDCAU.C.cgm'.
/cals/caps/Bin/read1840A: writing data file 'aftb9475/TO31R2-2U-433/
TXTRESD.C.cgm'.
/cals/caps/Bin/read1840A: writing data file 'aftb9475/TO31R2-2U-433/
TO31R22U433.G.dtd'.
/cals/caps/Bin/read1840A: writing data file 'aftb9475/TO31R2-2U-433/
TO31R22U433.G.dtd'.
/cals/caps/Bin/read1840A: writing data file 'aftb9475/TO31R2-2U-433/
TO31R22U433.G.dtd'.
/cals/caps/Bin/read1840A: writing data file 'aftb9475/TO31R2-2U-433/
TO31R22U433.G.dtd'.
/cals/caps/Bin/read1840A: writing data file 'aftb9475/TO31R2-2U-433/
M0401.Q.igs'.

                          <<<<< PART OF LOG FILE REMOVED HERE >>>>>
/cals/caps/Bin/read1840A: writing data file 'aftb9475/TO31R2-2U-433/
T43337.Q.igs'.
/cals/caps/Bin/read1840A: writing data file 'aftb9475/TO31R2-2U-433/
T43339.R.cci'.

                          <<<<< PART OF LOG FILE REMOVED HERE >>>>>

/cals/caps/Bin/read1840A: writing data file 'aftb9475/TO31R2-2U-433/
W.T.sgm'.
-- declaration file indicates 1 files of type T
-- declaration file indicates 4 files of type G
-- declaration file indicates 0 files of type H
-- declaration file indicates 26 files of type Q
-- declaration file indicates 6 files of type R
-- declaration file indicates 2 files of type C
-- declaration file indicates 0 files of type X
-- declaration file indicates 0 files of type P
-- declaration file indicates 0 files of type Z
```

10. Appendix B - Detailed IGES Analysis

10.1 File D001Q030

10.1.1 Parser/Verifier Log

```
************************************
*****  IGES PARSER/VERIFIER   *****
*****       MARCH 1993        *****
*****   IGES Data Analysis    *****
*****     (708) 344-1815      *****
************************************

Input file is q030.igs
Checking conformance to CALS Class I (MIL-D-28000A 2/10/92)

Today is June 20, 1994  3:16 PM

************************************
*****    CHECK FILE SYNTAX    *****
************************************

   Section        Records

   Start             5
   Global            3
   Directory      3464  (   1732 Entities)
   Parameter      2814
   Terminate         1

   No syntax errors detected.

************************************
*****  SUMMARY AND STATISTICS  ****
************************************

*** File and Product Name Information ***

   File name from sender    = 'T433.33.dwg'
   File creation Date.Time  = '940419.133847'
   Model change Date.Time   = ''
   Author                   = 'Brian Keefe'
   Department               = ''
   Product name from sender = 'Xerox Expert'
   Destination product name = ''
```

```
*** Parameter Delimiters ***

   Delimiter  = ','
   Terminator = ';'

*** Originating System Data ***

   System ID              = 'Xerox Expert version 5.0'
   Preprocessor version   = '5.0'
   Specification version = 6 (IGES 4.0)

*** Precision levels ***
   Integer bits =    16
   Floating point  -  Exponent =    38  Mantissa =     7
   Double precision - Exponent =    38  Mantissa =     7

*** Global Model Data ***

   Model scale            =  1.0000E+00
   Unit flag              =  1
   Units                  =  'INCH'
   Line weights           =  3
   Maximum line thickness =  4.166667E-02
   Minimum line thickness =  1.388889E-02
   Granularity            =  1.000000E-05
   Maximum coordinate     =  1.700001E+01

   Drafting standard applicable to original data is not specified.

*** Status Flag Summary ***

 Blank status: Visible                    1732
               Blanked                       0

 Independence: Independent                1527
               Physically Subordinate      203
               Logically Subordinate         2
               Totally Subordinate           0

 Entity use:   Geometry                   1044
               Annotation                  685
               Definition                    2
               Other                         1
               Logical/Positional            0
               2D parametric                 0
               Construction geometry         0
               Not Specified                 0
```

Hierarchy:		
	Structure DE applies	1732
	Subordinate DE applies	0
	Hierarchy property applies	0
	Not Specified	0

*** Entity Occurrence Counts ***

Entity	Form	Level	Count	Type
100	0	0	382	Circular arc
102	0	0	11	Composite curve
110	0	0	640	Line
212	0	0	685	General note
230	0	0	11	Sectioned area (Standard Crosshatching)
404	0	0	1	Drawing
406	16	0	1	Property - Drawing size
410	0	0	1	View - Orthographic parallel

*** Entity Count by Level ***

Level	Count
0	1732

*** Labeling Information ***

100% of the entities are labeled.

Unlabeled 0

Label	Count	Label	Count	Label	Count
View	1*	GNote	685*	Line	640*
Circle	290*	Arc	92*	Composit	11
Section	11*	Property	1	Drawing	1*

NITPICK 2327: One or more of the flagged entity labels are not right-justified.

*** Line Fonts Used in Data ***

100	102	104	106	108	110	112	114	
-	-	-	-	-	-	-	-	Undefined
382	11	-	-	-	636	-	-	Solid
-	-	-	-	-	4	-	-	Dashed
-	-	-	-	-	-	-	-	Phantom
-	-	-	-	-	-	-	-	Center-line

<<<<< PART OF LOG FILE REMOVED HERE >>>>>

```
 *** Line Widths Used in Data ***

    Weight      Count     Width

 Defaulted      910      (0.0139)
      1         710      (0.0139)
      2         112      (0.0278)

 *** Colors Used in Data ***

 Defaulted       25
     Green     1707

 ***********************************
 *****     ENTITY ANALYSIS     *****
 ***********************************

 *** Entity type: 100

ERROR    2242: Radii not equal at D    567; difference is 1.100000E-05.
ERROR    2242: Radii not equal at D    581; difference is 1.100000E-05.
ERROR    2242: Radii not equal at D    597; difference is 1.100000E-05.
ERROR    2242: Radii not equal at D    603; difference is 1.100000E-05.
ERROR    2242: Radii not equal at D    615; difference is 1.000000E-05.

 *** Entity type: 102

ERROR    2033: End points of curves D   3025 and D   3027 disjoint by
               1.559251E+00 at D   3307.
ERROR    2033: End points of curves D   3027 and D   3029 disjoint by
               8.662500E-02 at D   3307.
ERROR    2033: Messages regarding disjoint composite curves suppressed.
NOTE     2391: Start point D   3395 and D   3397 are the same, possible reversal
               of D   3397.

 *** Entity type: 110

  --   640 lines averaging 5.711813E-01 units --

 *** Entity type: 212

       685 text strings in data file.
       Average text aspect ratio in file is 0.9025155.
       Minimum text aspect ratio in file is 0.9001241.
       Maximum text aspect ratio in file is 0.9032298.
```

```
      FONTS USED IN FILE

      FONT    COUNT    NAME

         1      677    Default ASCII Style
      1003        8    Drafting Font

 *** Entity type: 230

NITPICK 2076: Entity does not have Annotation flag set at D    3309.
NITPICK 2076: Entity does not have Annotation flag set at D    3325.
NITPICK 2076: Messages regarding entity use (annotation) suppressed.

 *** Entity type: 404

NITPICK 2074: Entity use flag must be 1 for Drawing entity at D    3463.
Drawing at D    3463 contains 1 views.
Drawing at D    3463 contains 0 annotation entities.

 *** Entity type: 406

 *** Entity type: 410

NITPICK 2073: Entity use flag must be 1 for View entity at D       1.
  Scale of view at D       1 is 1.000000E+00.
Orthographic View entity at D       1 has  0 clipping planes specified.
   XMIN = Not Set       XMAX = Not Set
   YMIN = Not Set       YMAX = Not Set
   ZMIN = Not Set       ZMAX = Not Set

 *** Message Summary ***

2007: 171 Mathematical discontinuities.
2015: 5 Mathematically incorrect definitions.
2016: 13 Invalid entity use flag.

 *** Error Summary ***

     0 fatal errors
     0 severe errors
   176 errors
     0 warnings
     0 cautions
    14 nitpicks
     1 notes

 *** End of Analysis of q030.igs ***
```

10.1.2 Parser Log - IGESWorks

```
                    IGES/Works v1.4.1
            International TechneGroup Incorporated
                      Validation Logfile

Date:   June 20, 1994
Model:  q030

******************** Validation Parameters ********************

             TOLERANCE CONFIGURATION VALUES
             ------------------------------

ZERO_TOL                    = 1.000000e-13
MODEL_SPACE_PNT_COIN_TOL    = 1.000000e-03
PARM_SPACE_PNT_COIN_TOL     = 1.000000e-08
ISO_PARM_CURVE_TOL          = 1.000000e-08
NON_CONV_TOL                = 1.000000e-12
KNOT_COIN_TOL               = 1.000000e-10
SAME_INTER_TOL              = 1.000000e-12
PARALLEL_LINES_TOL          = 1.000000e-07
ANGLE_COIN_TOL              = 1.000000e-05
PNT_PROJ_TOL                = 1.000000e-07
COLIN_TOL                   = 1.000000e-07
COPLANAR_TOL                = 1.000000e-08
ZERO_NORMAL_TOL             = 1.000000e-06
SAME_TANGENT_TOL            = 1.000000e-04
SAME_CURVATURE_TOL          = 1.000000e-04
SAME_DERIVATIVE_TOL         = 1.000000e-03
MODEL_LINEAR_APPROX_TOL     = 2.220446e-16

************** Entity Listing Before Validation ***************

  Count        Type         Form         Description
  -----        ----         ----         -----------
    382         100           0         Circular Arc
     11         102           0         Composite Curve
    640         110           0         Line
    685         212           0         General Note (Simple)
     11         230           0         Section Area (Standard Fill)
      1         404           0         Drawing (form 0)
      1         406          16         Property (Drawing Size)
      1         410           0         View

   1732  -  Number of entities in selection list
```

********** Entity Validation **********

*** Warning (IEVM_LABEL_NOT_RJ) ***
(DE 1, TF 410:0) The Label Display field in this entity's DE section was not set for right justification.
Action taken: The Label Display field has been set to be right-justified.

<<<<< PART OF LOG FILE REMOVED HERE >>>>>

*** Warning (IEVM_RADII_NOT_EQUAL_100) ***
(DE 567, TF 100:0) This circular arc entity's start point and end point radii are not equal in length. Start point radius: 2.7730000e-02. Terminate point radius: 2.7719000e-02.
Action taken: Center point moved 7.7781745e-06 units from 1.4678650e+01, 4.5175510e+00 to 1.4678644e+01, 4.5175565e+00.

<<<<< PART OF LOG FILE REMOVED HERE >>>>>

*** Warning (IEVM_NON_CONTINUOUS_102) ***
(DE 3307, TF 102:0) This Composite Curve entity (102) is not continuous within the stated tolerance. The terminate point of the first curve does not equal the start point of the next curve.
Action taken: The curve was made continuous by the following actions. A line, DE 3465, was added between DE's 3025 and 3027. A line, DE 3467, was added between DE's 3027 and 3029. A line, DE 3469, was added between DE's 3029 and 3031. A line, DE 3471, was added between DE's 3031 and 3033. A line, DE 3473, was added between DE's 3033 and 3035. A line, DE 3475, was added between DE's 3035 and 3037. A line, DE 3477, was added between DE's 3037 and 3039. A line, DE 3479, was added between DE's 3039 and 3041. A line, DE 3481, was added between DE's 3041 and 3043. A line, DE 3483, was added between DE's 3043 and 3045. A line, DE 3485, was added between DE's 3045 and 3047. A line, DE 3487, was added between DE's 3047 and 3049. A line, DE 3489, was added between DE's 3049 and 3051. A line, DE 3491, was added between DE's 3051 and 3053. A line, DE 3493, was added between DE's 3053 and 3055. A line, DE 3495, was added between DE's 3055 and 3057. A line, DE 3497, was added between DE's 3057 and 3059. A line, DE 3499, was added between DE's 3059 and 3061. A line, DE 3501, was added between DE's 3061 and 3063. A line, DE 3503, was added between DE's 3063 and 3065. A line, DE 3505, was added between DE's 3065 and 3067. A line, DE 3507, was added between DE's 3067 and 3069. A line, DE 3509, was added between DE's 3069 and 3071. A line, DE 3511, was added between DE's 3071 and 3073. A line, DE 3513, was added between DE's 3073 and 3075. A line, DE 3515, was added between DE's 3075 and 3077. A line, DE 3517, was added between DE's 3077 and 3079. A line, DE 3519, was added between DE's 3079 and 3081. A line, DE 3521, was added between DE's 3081 and 3083. A line, DE 3523, was added between DE's 3083 and 3085. A line, DE 3525, was added between DE's 3085 and 3087. A line, DE 3527, was added between DE's 3087 and 3089. A line, DE 3529, was added between DE's 3089 and 3091. A line, DE 3531, was added between DE's 3091 and 3093.

A line, DE 3533, was added between DE's 3093 and 3095. A line, DE 3535, was added between DE's 3095 and 3097. A line, DE 3537, was added between DE's 3097 and 3099. A line, DE 3539, was added between DE's 3099 and 3101. A line, DE 3541, was added between DE's 3101 and 3103. A line, DE 3543, was added between DE's 3103 and 3105. A line, DE 3545, was added between DE's 3105 and 3107. A line, DE 3547, was added between DE's 3107 and 3109. A line, DE 3549, was added between DE's 3109 and 3111. A line, DE 3551, was added between DE's 3111 and 3113. A line, DE 3553, was added between DE's 3113 and 3115. A line, DE 3555, was added between DE's 3115 and 3117. A line, DE 3557, was added between DE's 3117 and 3119. A line, DE 3559, was added between DE's 3119 and 3121. A line, DE 3561, was added between DE's 3121 and 3123. A line, DE 3563, was added between DE's 3123 and 3125. A line, DE 3565, was added between DE's 3125 and 3127. A line, DE 3567, was added between DE's 3127 and 3129. A line, DE 3569, was added between DE's 3129 and 3131. A line, DE 3571, was added between DE's 3131 and 3133. A line, DE 3573, was added between DE's 3133 and 3135. A line, DE 3575, was added between DE's 3135 and 3137. A line, DE 3577, was added between DE's 3137 and 3139. A line, DE 3579, was added between DE's 3139 and 3141. A line, DE 3581, was added between DE's 3141 and 3143. A line, DE 3583, was added between DE's 3143 and 3145. A line, DE 3585, was added between DE's 3145 and 3147. A line, DE 3587, was added between DE's 3147 and 3149. A line, DE 3589, was added between DE's 3149 and 3151. A line, DE 3591, was added between DE's 3151 and 3153. A line, DE 3593, was added between DE's 3153 and 3155. A line, DE 3595, was added between DE's 3155 and 3157. A line, DE 3597, was added between DE's 3157 and 3159. A line, DE 3599, was added between DE's 3159 and 3161. A line, DE 3601, was added between DE's 3161 and 3163. A line, DE 3603, was added between DE's 3163 and 3165. A line, DE 3605, was added between DE's 3165 and 3167. A line, DE 3607, was added between DE's 3167 and 3169. A line, DE 3609, was added between DE's 3169 and 3171. A line, DE 3611, was added between DE's 3171 and 3173. A line, DE 3613, was added between DE's 3173 and 3175. A line, DE 3615, was added between DE's 3175 and 3177. A line, DE 3617, was added between DE's 3177 and 3179. A line, DE 3619, was added between DE's 3179 and 3181. A line, DE 3621, was added between DE's 3181 and 3183. A line, DE 3623, was added between DE's 3183 and 3185. A line, DE 3625, was added between DE's 3185 and 3187. A line, DE 3627, was added between DE's 3187 and 3189. A line, DE 3629, was added between DE's 3189 and 3191. A line, DE 3631, was added between DE's 3191 and 3193. A line, DE 3633, was added between DE's 3193 and 3195. A line, DE 3635, was added between DE's 3195 and 3197. A line, DE 3637, was added between DE's 3197 and 3199. A line, DE 3639, was added between DE's 3199 and 3201. A line, DE 3641, was added between DE's 3201 and 3203. A line, DE 3643, was added between DE's 3203 and 3205. A line, DE 3645, was added between DE's 3205 and 3207. A line, DE 3647, was added between DE's 3207 and 3209. A line, DE 3649, was added between DE's 3209 and 3211. A line, DE 3651, was added between DE's 3211 and 3213. A line, DE 3653, was added between DE's 3213 and 3215. A line, DE 3655, was added between DE's 3215 and 3217. A line, DE 3657, was added between DE's 3217 and 3219. A line, DE 3659, was added between DE's 3223 and 3225.

A line, DE 3661, was added between DE's 3225 and 3227. A line, DE 3663, was added between DE's 3227 and 3229. A line, DE 3665, was added between DE's 3229 and 3231. A line, DE 3667, was added between DE's 3231 and 3233. A line, DE 3669, was added between DE's 3233 and 3235. A line, DE 3671, was added between DE's 3235 and 3237. A line, DE 3673, was added between DE's 3237 and 3239. A line, DE 3675, was added between DE's 3239 and 3241. A line, DE 3677, was added between DE's 3241 and 3243. A line, DE 3679, was added between DE's 3243 and 3245. A line, DE 3681, was added between DE's 3245 and 3247. A line, DE 3683, was added between DE's 3247 and 3249. A line, DE 3685, was added between DE's 3253 and 3255. A line, DE 3687, was added between DE's 3255 and 3257. A line, DE 3689, was added between DE's 3257 and 3259. A line, DE 3691, was added between DE's 3259 and 3261. A line, DE 3693, was added between DE's 3261 and 3263. A line, DE 3695, was added between DE's 3263 and 3265. A line, DE 3697, was added between DE's 3265 and 3267. A line, DE 3699, was added between DE's 3267 and 3269. A line, DE 3701, was added between DE's 3269 and 3271. A line, DE 3703, was added between DE's 3271 and 3273. A line, DE 3705, was added between DE's 3273 and 3275. A line, DE 3707, was added between DE's 3275 and 3277. A line, DE 3709, was added between DE's 3277 and 3279. A line, DE 3711, was added between DE's 3279 and 3281. A line, DE 3713, was added between DE's 3281 and 3283. A line, DE 3715, was added between DE's 3283 and 3285. A line, DE 3717, was added between DE's 3285 and 3287. A line, DE 3719, was added between DE's 3287 and 3289. A line, DE 3721, was added between DE's 3289 and 3291. A line, DE 3723, was added between DE's 3291 and 3293. A line, DE 3725, was added between DE's 3293 and 3295. A line, DE 3727, was added between DE's 3295 and 3297. A line, DE 3729, was added between DE's 3297 and 3299. A line, DE 3731, was added between DE's 3299 and 3301. A line, DE 3733, was added between DE's 3301 and 3303. A line, DE 3735, was added between DE's 3303 and 3305.

*** Warning (IEVM_NON_CONTINUOUS_102) ***
(DE 3323, TF 102:0) This Composite Curve entity (102) is not continuous within the stated tolerance. The terminate point of the first curve does not equal the start point of the next curve.
Action taken: The curve was made continuous by the following actions. DE 3311 was reversed. DE 3313 was reversed. A line, DE 3737, was added between DE's 3315 and 3317. A line, DE 3739, was added between DE's 3317 and 3319. A line, DE 3741, was added between DE's 3319 and 3321.

<<<<< PART OF LOG FILE REMOVED HERE >>>>>

Entity Validation Summary:

Type	Form	Entity Count	Number Valid	Number of Corrected Warnings	Number of Corrected Errors	Number of Uncorrected Warnings	Number of Uncorrected Errors
Global Section		1	1	0	0	0	0
100	0	382	0	382	5	0	0
102	0	11	0	0	11	0	0
110	0	799	159	640	0	0	0
212	0	685	0	685	0	0	0
230	0	11	0	11	0	0	0
404	0	1	0	1	0	0	0
406	16	1	1	0	0	0	0
410	0	1	0	1	0	0	0
Totals:		1892	161	1720	16	0	0

The following message was issued and suppressed 1715 times:

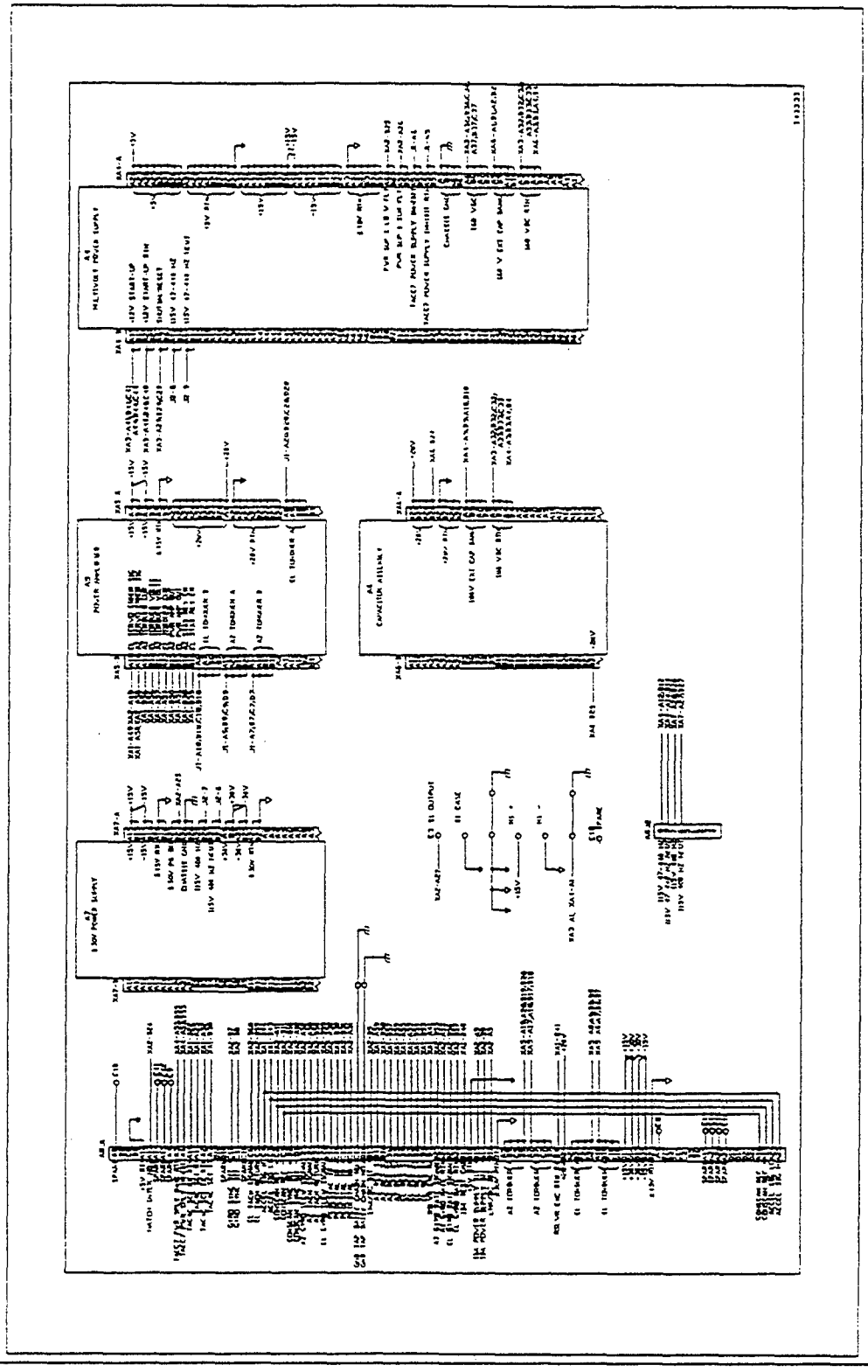
The Label Display field in this entity's DE section was not set for right justification.

The following message was issued and suppressed 6 times:

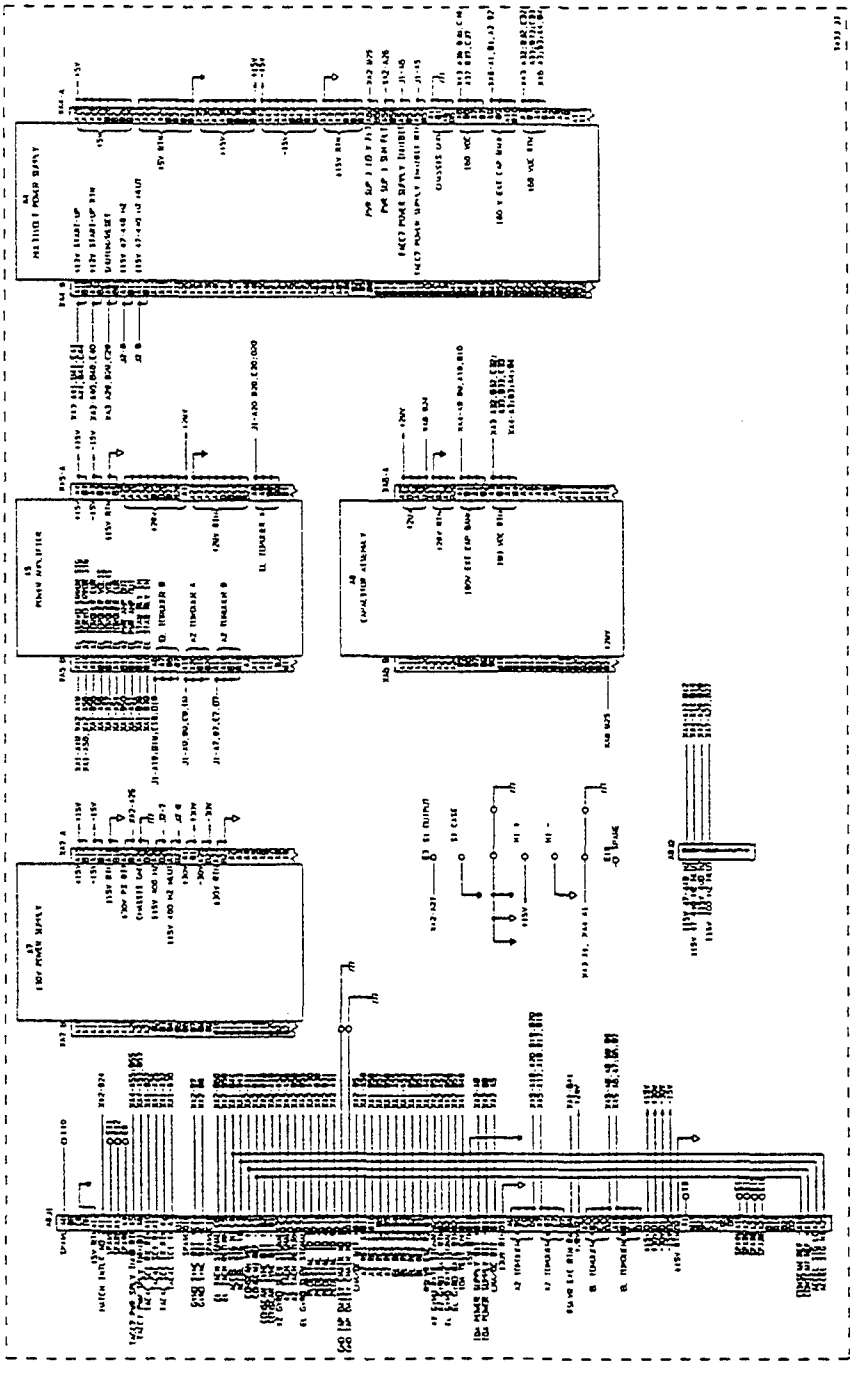
This Composite Curve entity (102) is not continuous within the stated tolerance. The terminate point of the first curve does not equal the start point of the next curve.

A message is suppressed when it has been issued more than 5 times.
This value is controlled by the 'MAX_MESSAGE' configuration parameter.
****

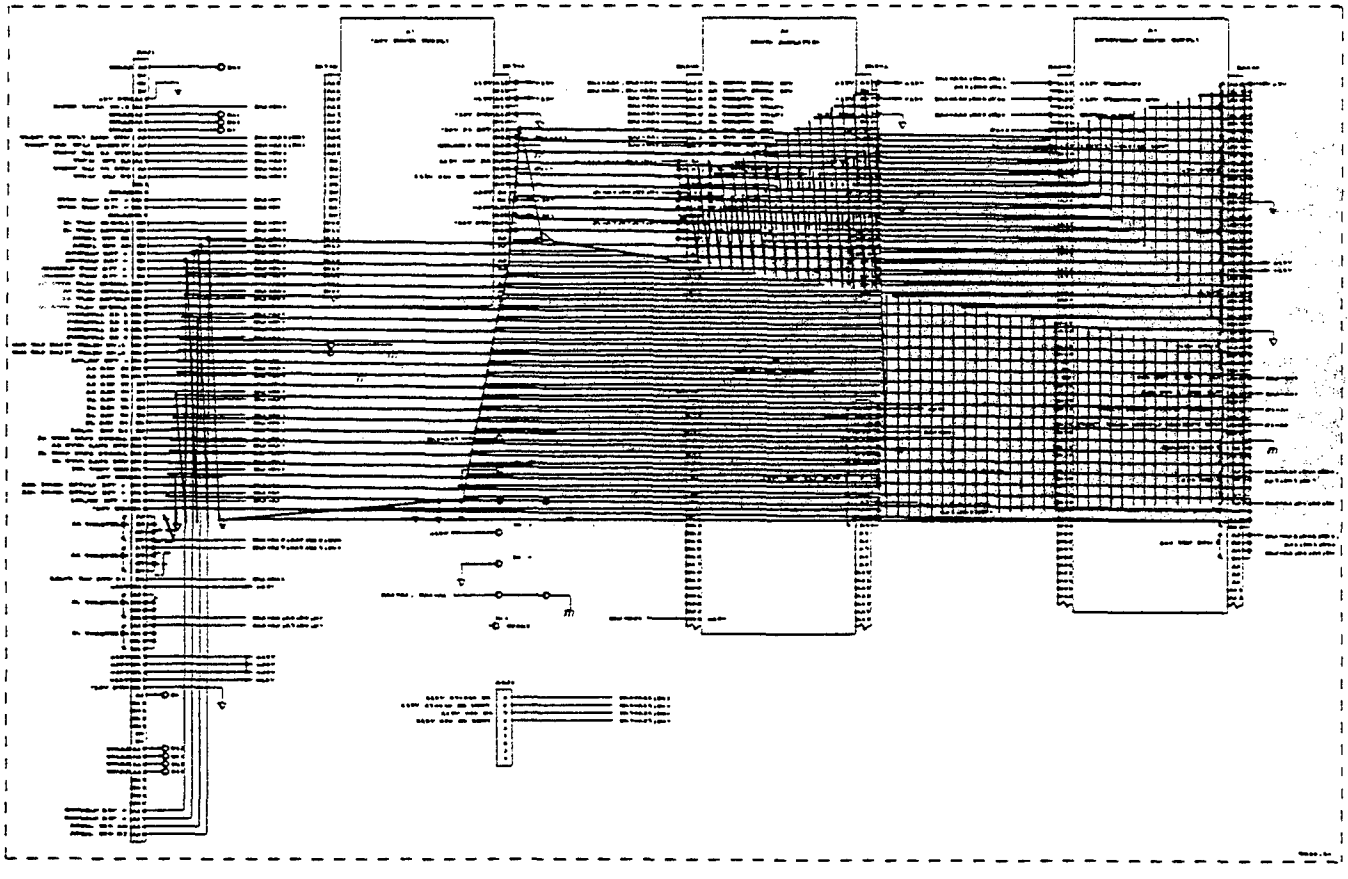
10.1.3 Output AutoCAD R12



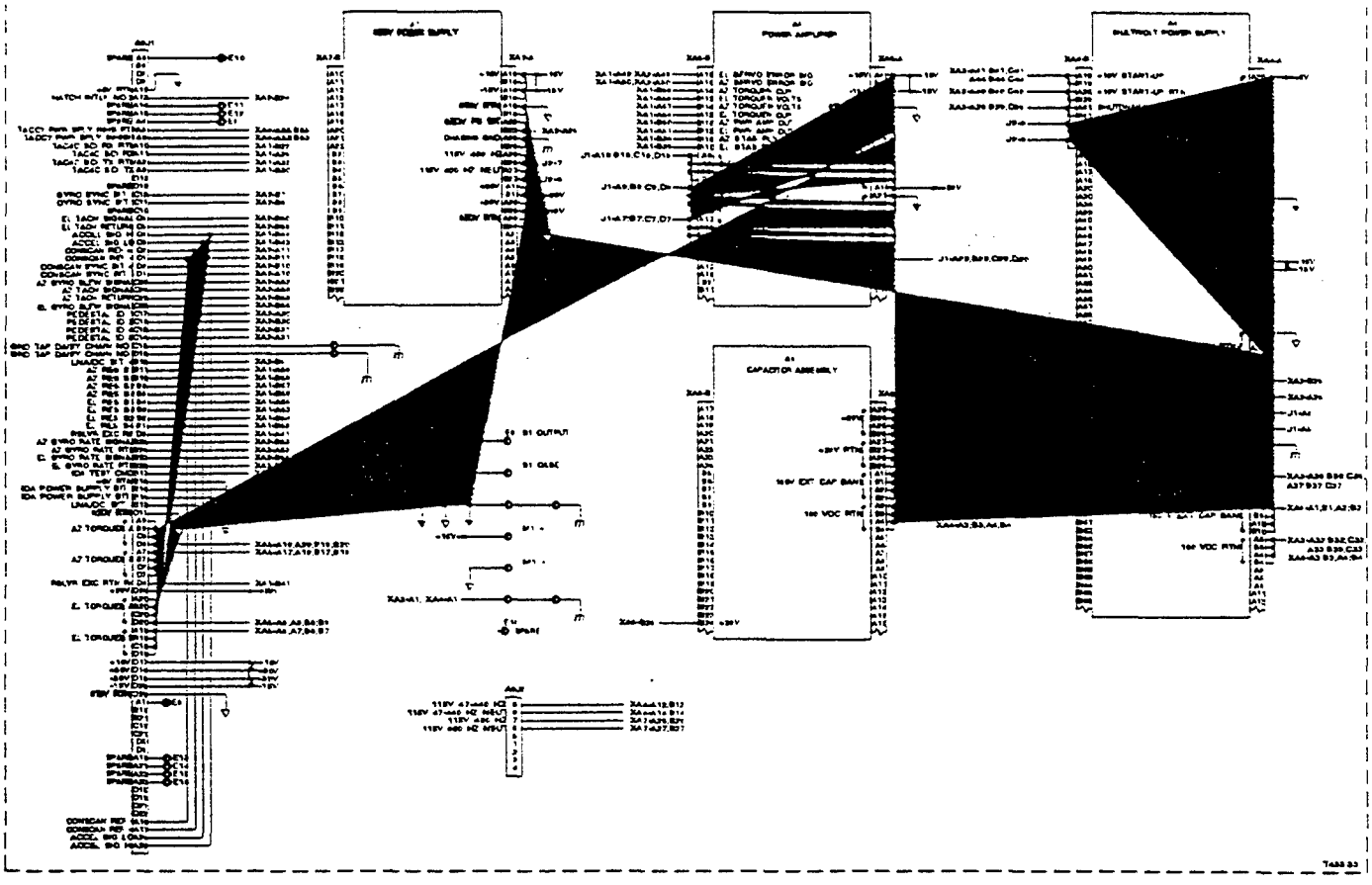
10.1.4 Output Cadkey v6.0



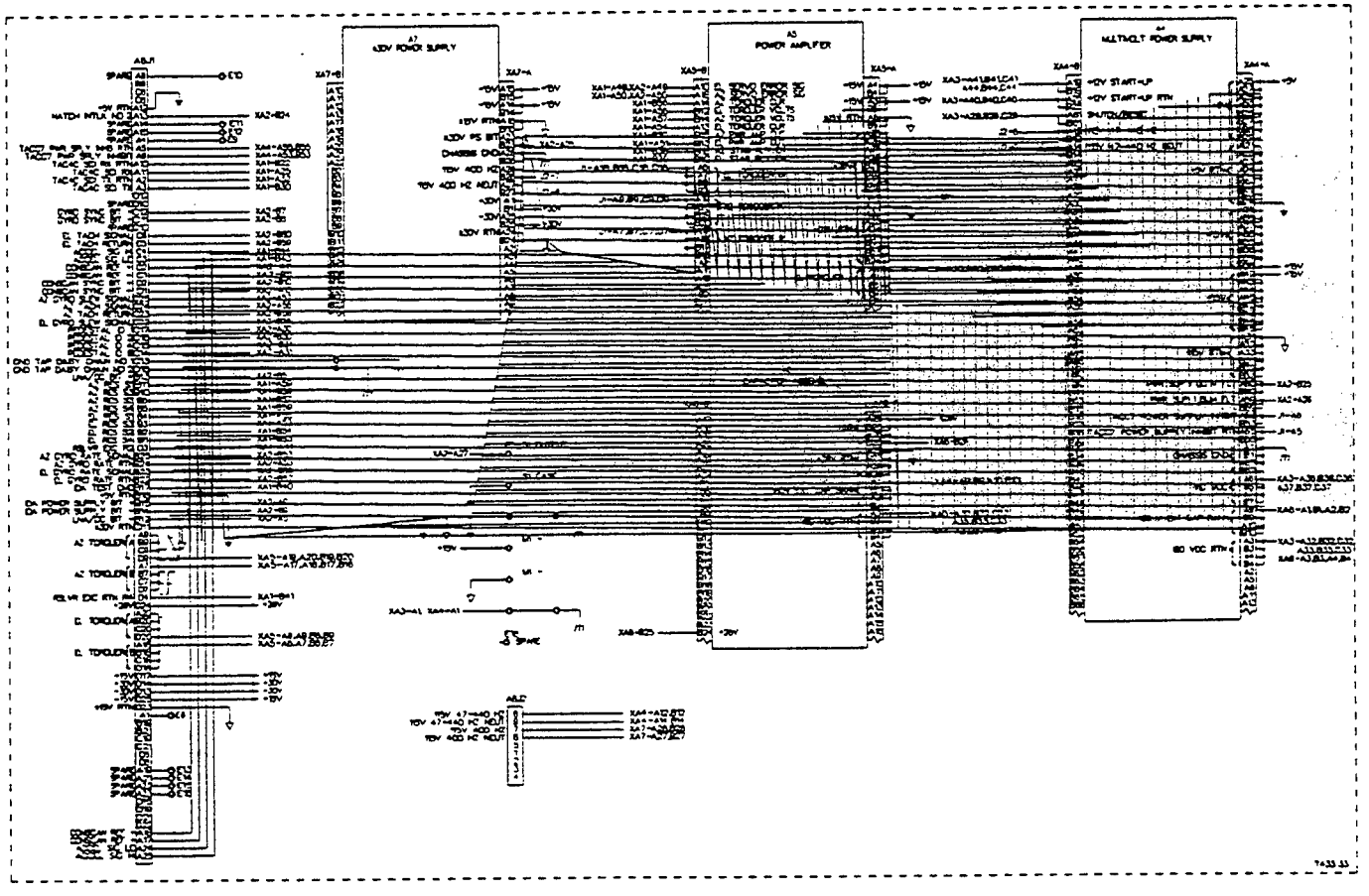
10.1.5 Output CADLeaf



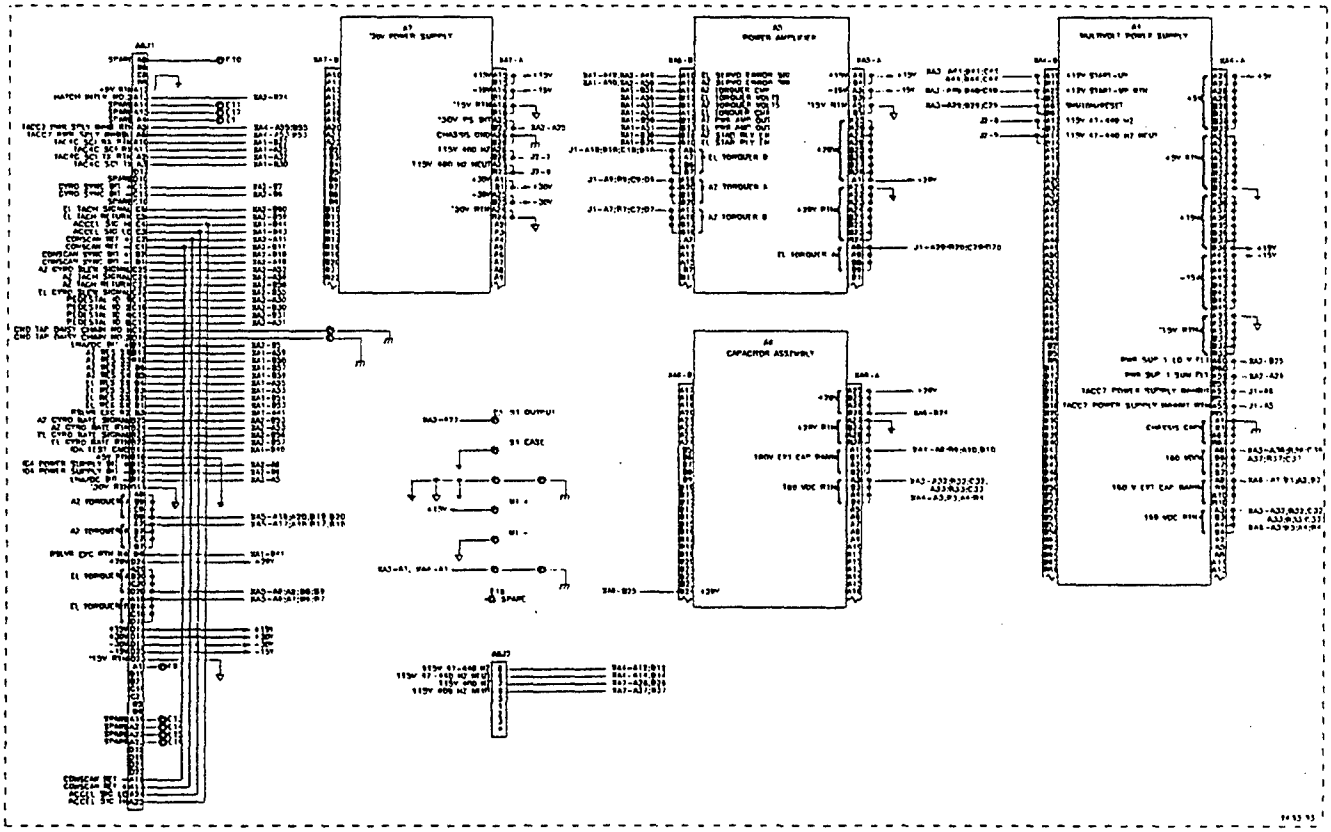
10.1.6 Output IslandDraw



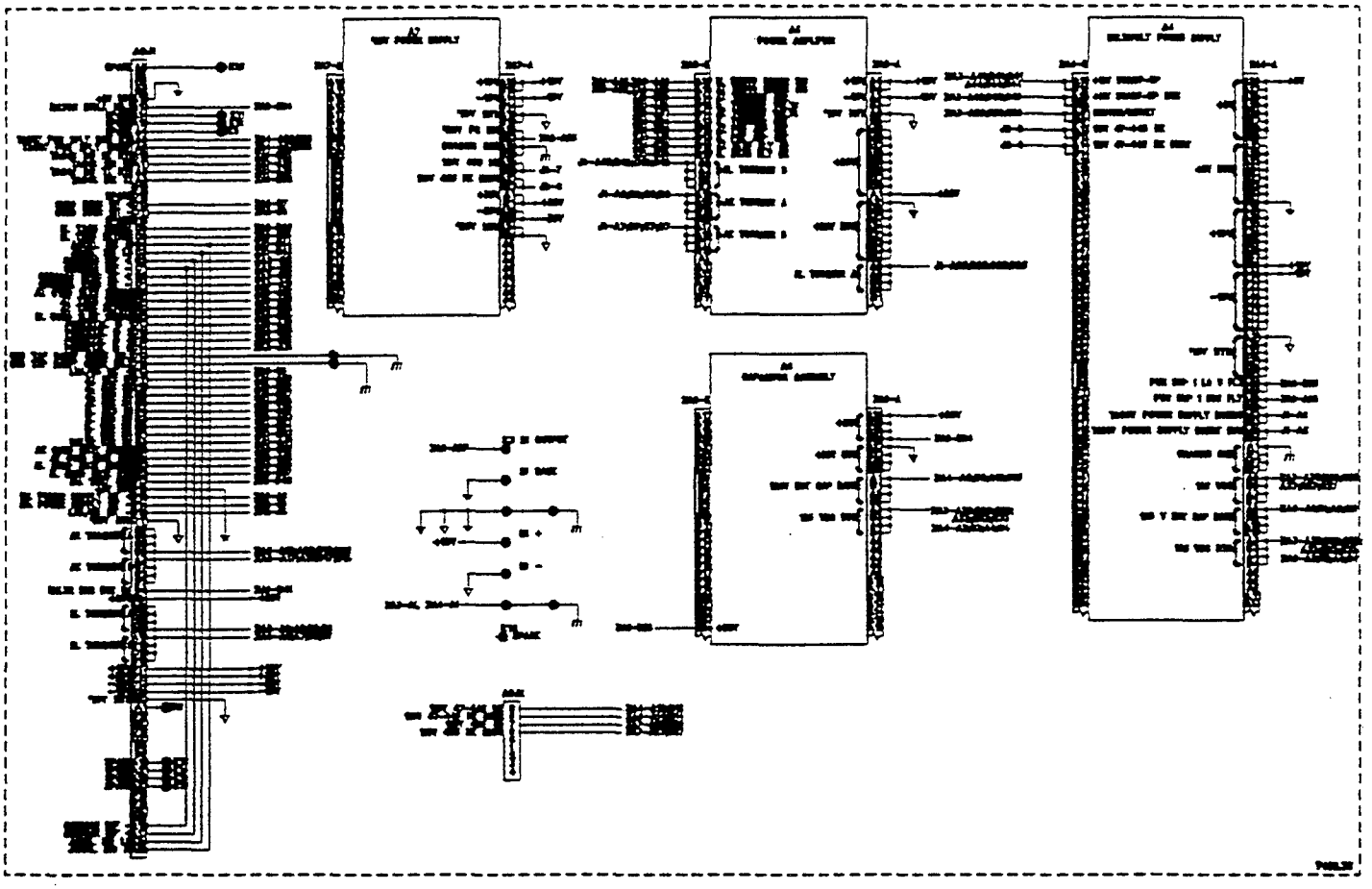
10.1.7 Output IGESView



10.1.8 Output Preview



10.1.9 Output X-Change



10.2 File D001Q031

10.2.1 Parser/Verifer Log

```
**********************************
*****  IGES PARSER/VERIFIER   *****
*****       MARCH 1993        *****
*****   IGES Data Analysis    *****
*****     (708) 344-1815      *****
**********************************

Input file is q031.igs

Checking conformance to CALS Class I (MIL-D-28000A 2/10/92)

Today is June 20, 1994  3:16 PM

**********************************
*****    CHECK FILE SYNTAX    *****
**********************************

   Section        Records

   Start              5
   Global             3
   Directory       3760  (   1880 Entities)
   Parameter       3030
   Terminate          1

   No syntax errors detected.

**********************************
*****  SUMMARY AND STATISTICS  ****
**********************************

*** File and Product Name Information ***

   File name from sender     = 'T433.35.dwg'
   File creation Date.Time   = '940419.134008'
   Model change Date.Time    = ''
   Author                    = 'Brian Keefe'
   Department                = ''
   Product name from sender  = 'Xerox Expert'
   Destination product name  = ''
```

```
*** Parameter Delimiters ***
   Delimiter  = ','
   Terminator = ';'

*** Originating System Data ***

   System ID              = 'Xerox Expert version 5.0'
   Preprocessor version   = '5.0'
   Specification version = 6 (IGES 4.0)

*** Precision levels ***
   Integer bits =    16
   Floating point  -  Exponent =    38  Mantissa =     7
   Double precision - Exponent =    38  Mantissa =     7

*** Global Model Data ***

   Model scale            =  1.0000E+00
   Unit flag              =  1
   Units                  =  'INCH'
   Line weights           =  3
   Maximum line thickness =  4.166667E-02
   Minimum line thickness =  1.388889E-02
   Granularity            =  1.000000E-05
   Maximum coordinate     =  1.700000E+01

   Drafting standard applicable to original data is not specified.

*** Status Flag Summary ***

 Blank status: Visible                    1880
               Blanked                       0

 Independence: Independent                1672
               Physically Subordinate      206
               Logically Subordinate         2
               Totally Subordinate           0

 Entity use:   Geometry                    985
               Annotation                  892
               Definition                    2
               Other                         1
               Logical/Positional            0
               2D parametric                 0
               Construction geometry         0
               Not Specified                 0
```

Hierarchy:	Structure DE applies	1880
	Subordinate DE applies	0
	Hierarchy property applies	0
	Not Specified	0

*** Entity Occurrence Counts ***

Entity	Form	Level	Count	Type
100	0	0	399	Circular arc
102	0	0	7	Composite curve
110	0	0	572	Line
212	0	0	892	General note
230	0	0	7	Sectioned area (Standard Crosshatching)
404	0	0	1	Drawing
406	16	0	1	Property - Drawing size
410	0	0	1	View - Orthographic parallel

*** Entity Count by Level ***

Level	Count
0	1880

*** Labeling Information ***

100% of the entities are labeled.

Unlabeled 0

Label	Count	Label	Count	Label	Count
View	1*	GNote	892*	Line	572*
Circle	349*	Arc	50*	Composit	7
Section	7*	Property	1	Drawing	1*

NITPICK 2327: One or more of the flagged entity labels are not right-justified.

*** Line Fonts Used in Data ***

100	102	104	106	108	110	112	114	
-	-	-	-	-	-	-	-	Undefined
399	7	-	-	-	568	-	-	Solid
-	-	-	-	-	4	-	-	Dashed
-	-	-	-	-	-	-	-	Phantom

<<<<< PART OF LOG FILE REMOVED HERE >>>>>

```
 *** Line Widths Used in Data ***
    Weight       Count      Width

  Defaulted       916       (0.0139)
       1          909       (0.0139)
       2           55       (0.0278)

 *** Colors Used in Data ***

  Defaulted        17
      Green      1863

 ************************************
 *****     ENTITY ANALYSIS      *****
 ************************************

 *** Entity type: 100

 *** Entity type: 102

ERROR    2033: End points of curves D   3323 and D   3325 disjoint by
               9.095400E-02 at D   3667.
ERROR    2033: End points of curves D   3325 and D   3327 disjoint by
               2.728710E-01 at D   3667.
ERROR    2033: Messages regarding disjoint composite curves suppressed.
NOTE     2391: Start point D   3733 and D   3735 are the same, possible reversal
               of D   3735.

 *** Entity type: 110

  --    572 lines averaging 6.127860E-01 units --

 *** Entity type: 212

       892 text strings in data file.
       Average text aspect ratio in file is 0.9024015.
       Minimum text aspect ratio in file is 0.8404755.
       Maximum text aspect ratio in file is 0.9032298.

       FONTS USED IN FILE

       FONT    COUNT    NAME

          1      887    Default ASCII Style
       1003        5    Drafting Font
```

```
 *** Entity type: 230

NITPICK 2076: Entity does not have Annotation flag set at D   3669.
NITPICK 2076: Entity does not have Annotation flag set at D   3679.
NITPICK 2076: Entity does not have Annotation flag set at D   3695.
NITPICK 2076: Entity does not have Annotation flag set at D   3705.
NITPICK 2076: Entity does not have Annotation flag set at D   3715.
NITPICK 2076: Entity does not have Annotation flag set at D   3725.
NITPICK 2076: Entity does not have Annotation flag set at D   3747.

 *** Entity type: 404

NITPICK 2074: Entity use flag must be 1 for Drawing entity at D   3759.
Drawing at D   3759 contains 1 views.
Drawing at D   3759 contains 0 annotation entities.

 *** Entity type: 406

 *** Entity type: 410

NITPICK 2073: Entity use flag must be 1 for View entity at D      1.
  Scale of view at D      1 is 1.000000E+00.
Orthographic View entity at D      1 has  0 clipping planes specified.
   XMIN = Not Set       XMAX = Not Set
   YMIN = Not Set       YMAX = Not Set
   ZMIN = Not Set       ZMAX = Not Set

 *** Message Summary ***

2007: 187 Mathematical discontinuities.
2016: 9 Invalid entity use flag.

 *** Error Summary ***

     0 fatal errors
     0 severe errors
   187 errors
     0 warnings
     0 cautions
    10 nitpicks
     1 notes

 *** End of Analysis of q031.igs ***
```

10.2.2 Post Processor Log - AutoCAD

```
Title: IGESIN Journal (v5.1 Nov 05 1992)
================================================================================ =
File: C:/TMP/Q031.xli
Date: Mon, Jun 20, 1994
Time: 15:51:04
================================================================================ =
EVALUATION VERSION -- NOT FOR RESALE

Translator S/N:   117-10075750
Translating from IGES file:        C:/TMP/Q031.IGS
           to AutoCAD Drawing:     C:\Q031.dwg
================================================================================ =
Options obtained from:  default settings
Curves Approximated to Tolerance of          0.01
Surfaces Approximated to Tolerance of        0.01

Text Font/Style mapping:
IGES Text font      Style Name       ACAD Font
         0                SYMBOL0        iges0
         1               STANDARD          txt
         2                  LEROY          txt
         3                 FUTURA          txt
         6                 COMP80          txt
        12                GOTHICE      gothice
        13                GOTHICI      gothici
        14                 ROMANS       romans
        17                 ROMANT       romant
        18                 ROMAND       romand
        19                    OCR          txt
      1001                SYMBOL1     iges1001
      1002                SYMBOL2     iges1002
      1003                SYMBOL3     iges1003
      2001                  KANJI      bigfont

IGES Linefont/AutoCAD Linetype mapping
IGES Line Font      AutoCAD linetype        Shape file
         0                  BYLAYER
         1                CONTINUOUS
         2                    DASHED             acad.lin
         3                   PHANTOM             acad.lin
         4                    CENTER             acad.lin
         5                       DOT             acad.lin
================================================================================ =
```

Parse phase

*** Warning (IAFP__LARGER_SGL_SIG) ***
C:/TMP/Q031.IGS, line 8: IGES file has greater number of significant digits in single precision numbers than this system.

*** Warning (IEVM_LABEL_NOT_RJ) ***
(DE 1, TF 410:0) DE has an invalid label justification.

Action taken: Label has been right justified.

<<<<< PART OF LOG FILE REMOVED HERE >>>>>

*** Warning (IEVM_RADII_NOT_EQUAL_100) ***
(DE 967, TF 100:0) Entity's radii are not equal. Start point radius: 2.9107000e-002. Terminate point radius: 2.9104000e-002.

Action taken: Start point moved 1.5000000e-006 units from 9.6424240e+000, 9.3436280e+000 to 9.6424225e+000, 9.3436280e+000. Terminate point moved 1.5000000e-006 units from 9.6133170e+000, 9.3727320e+000 to 9.6133170e+000, 9.3727335e+000.

<<<<< PART OF LOG FILE REMOVED HERE >>>>>

==========
Start Section:

Drawing name: T433.35.DWG. This file was converted by Expert.
Compliant with CALS class 1, per MIL-D-28000 Amendment 1.

DATE: 19-Apr-94 13:40:08

Global Section:

Parameter Delimiter:	,
Record Delimiter:	;
Sending Product ID:	Xerox Expert
File Name:	T433.35.dwg
System ID:	Xerox Expert version 5.0
Preprocessor Version:	5.0
Size of Integer:	16
Sgl. Precision Mag:	38
Sgl. Precision Sig:	7
Dbl. Precision Mag:	38
Dbl. Precision Sig:	7
Receiving Product ID:	
Model Space Scale:	1.000000
Unit Flag:	1

Unit String: INCH
# of Line Weights: 3
Maximum Line Width: 0.041667
Creation Date: 04/19/94 13:40:08
Minimum Resolution: 0.000010
Maximum Coordinate: 17.000000
Author: Brian Keefe
Organization:
IGES Version Number: 6
Drafting Standard: 0

Entity Summary:

Type	Form	Description	Count
100	0	Circular Arc	399
102	0	Composite Curve	7
110	0	Line	572
212	0	General Note (Simple)	892
230	0	Section Area (Standard Fill)	7
404	0	Drawing (form 0)	1
406	16	Property (Drawing Size)	1
410	0	View	1
		Total	1880

Translation phase

*** Warning (IGEO_DISCONTINUOUS) ***
(DE: 3667 TF: 102:0 NAME: Composite Curve)
The IGES entity is discontinuous between segment 1 and 2.
A linear segment will be added at the discontinuity for approximation.

<<<<< PART OF LOG FILE REMOVED HERE >>>>>

*** Error (IGEO_SECTAREANOTCLOSED) ***
(DE: 3669 TF: 230:0 NAME: Section Area (Standard Fill))
The section area is not closed.

<<<<< PART OF LOG FILE REMOVED HERE >>>>>

Drawing Entity (404 Form 0) at DE 3759, with
name = ,
size = 17.000000, 11.000000,
units = IN,
was processed in the AutoCAD drawing file: C:\Q031.dwg

```
*** Warning (ACAD_NEW_VIEW_VOLUME_GENERATED) ***
( DE: 1 TF: 410:0 )
A new view volume has been generated for the view with:
 XMIN (-2.024844), XMAX (19.024846),
 YMIN (-2.024846), YMAX (13.024846),
 ZMIN (-2.024846), ZMAX (2.024846).
```

IGES Entity Summary

Type	Form	Description	Count	Processed	Errors
100	0	Circular Arc	571	571	0
102	0	Composite Curve	12	12	0
110	0	Line	545	545	0
212	0	General Note (Simple)	892	892	0
230	0	Section Area (Standard Fill)	7	7	0
404	0	Drawing (form 0)	1	1	0
406	16	Property (Drawing Size)	1	1	0
410	0	View	1	1	0
Totals			2030	2030	0

AutoCAD Entity Summary

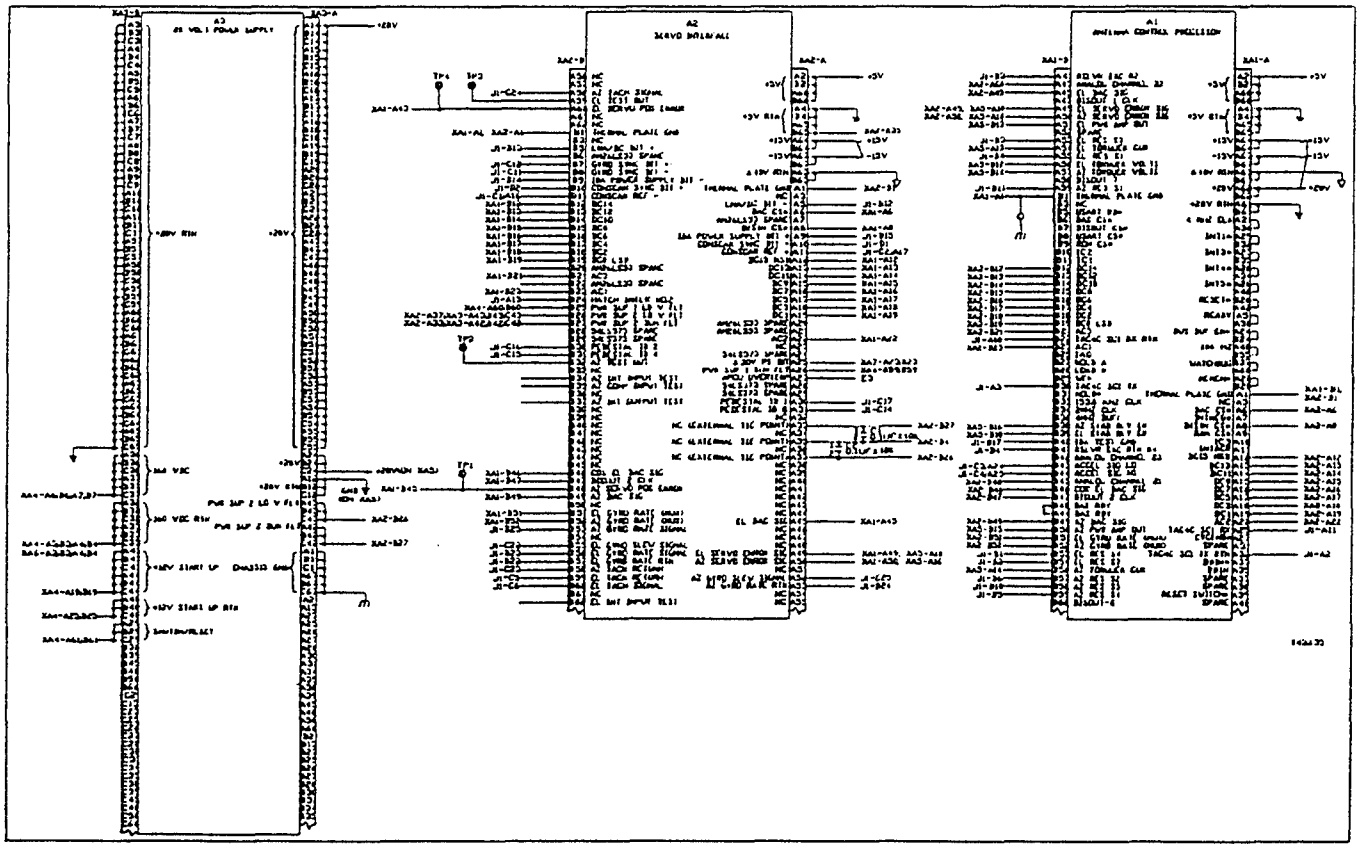
Entity	Created	Errors
LINE	545	0
CIRCLE	521	0
TEXT	892	0
ARC	50	0
SOLID	2	0
INSERT	6	0
POLYLINE	4	0
BLOCK	7	0
Totals	2027	0

Error Summary:

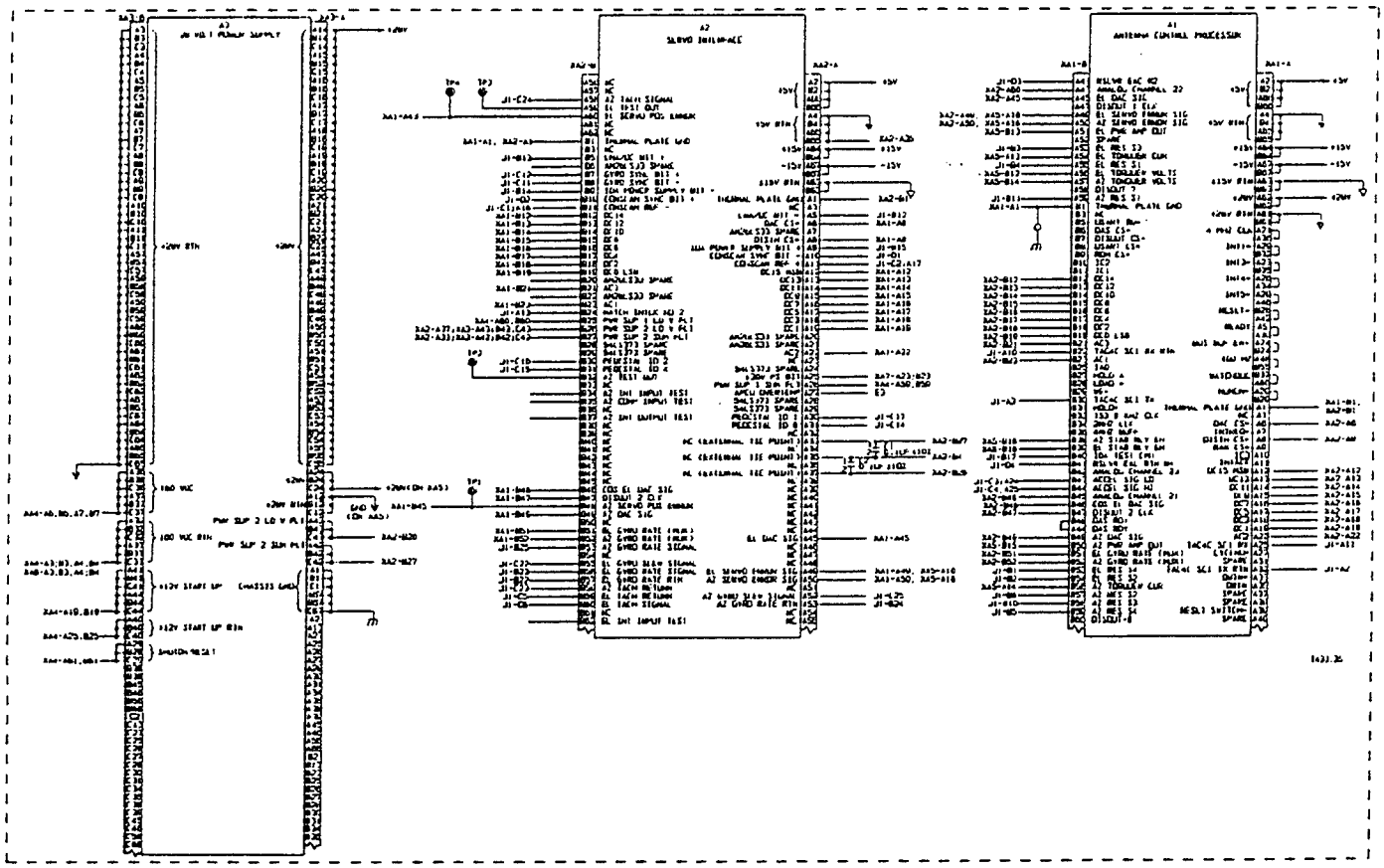
The following message was issued 1 time(s)
IGES file has greater number of significant digits in single precision numbers than this system.

```
The following message was issued 1872 time(s)
DE has an invalid label justification.
The following message was issued 35 time(s)
Entity's radii are not equal.  Start point radius: %.7e.  Terminate point
radius: %.7e.

The following message was issued 5 time(s)
The section area is not closed.

The following message was issued 185 time(s)
The IGES entity is discontinuous between segment %d and %d.
A linear segment will be added at the discontinuity for approximation.

The following message was issued 1 time(s)
A new view volume has been generated for the view with:
 XMIN (%lf), XMAX (%lf),
 YMIN (%lf), YMAX (%lf),
 ZMIN (%lf), ZMAX (%lf).

Status:  0
Warning: 2094
Error:   5
Fatal:   0

Elapsed Time:

Processor: 00:01:07
Clock:     00:01:08
================================================================================
```

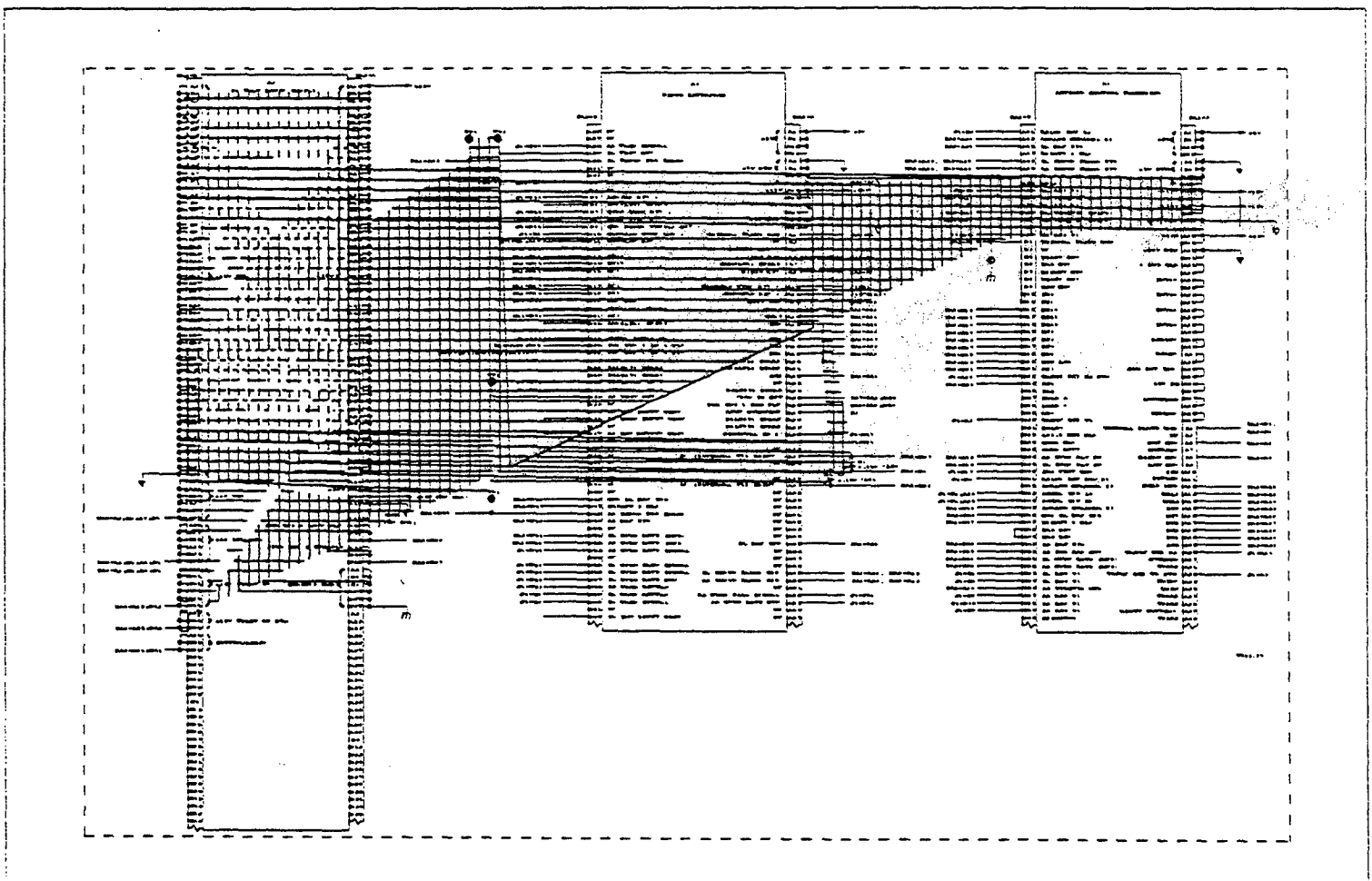
10.2.3 Output AutoCAD R12



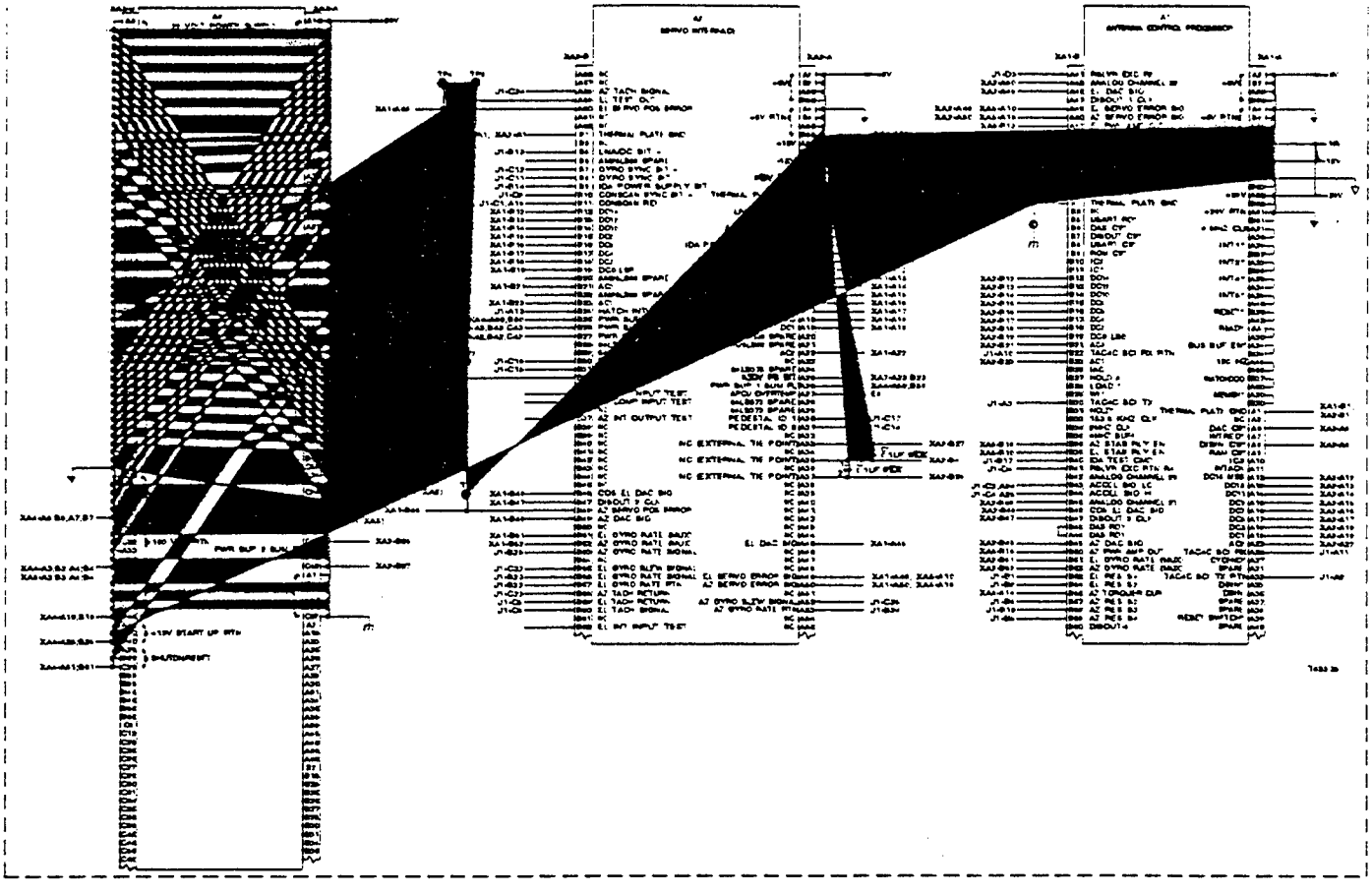
10.2.4 Output Cadkey v6.0



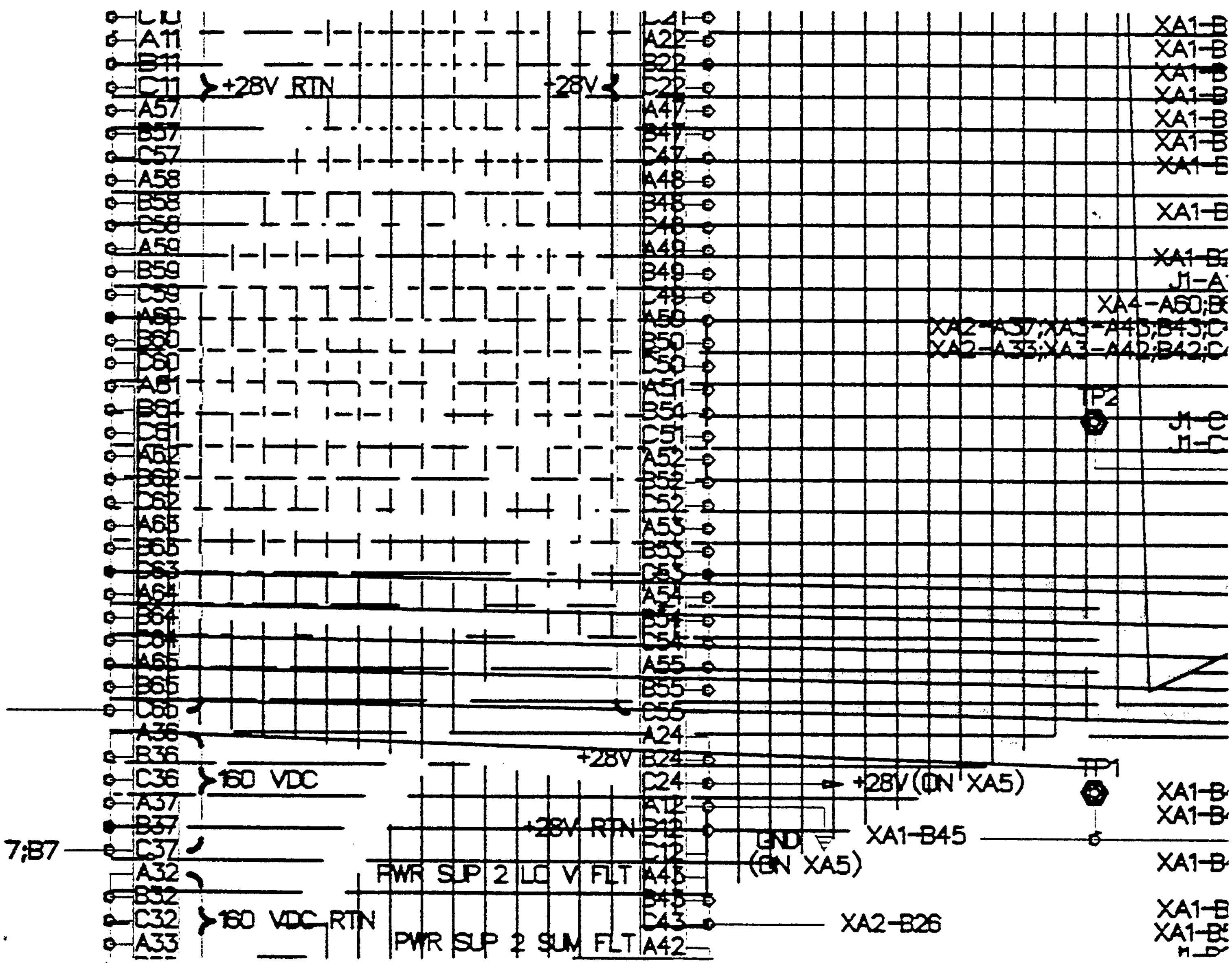
10.2.5 Output CADLeaf



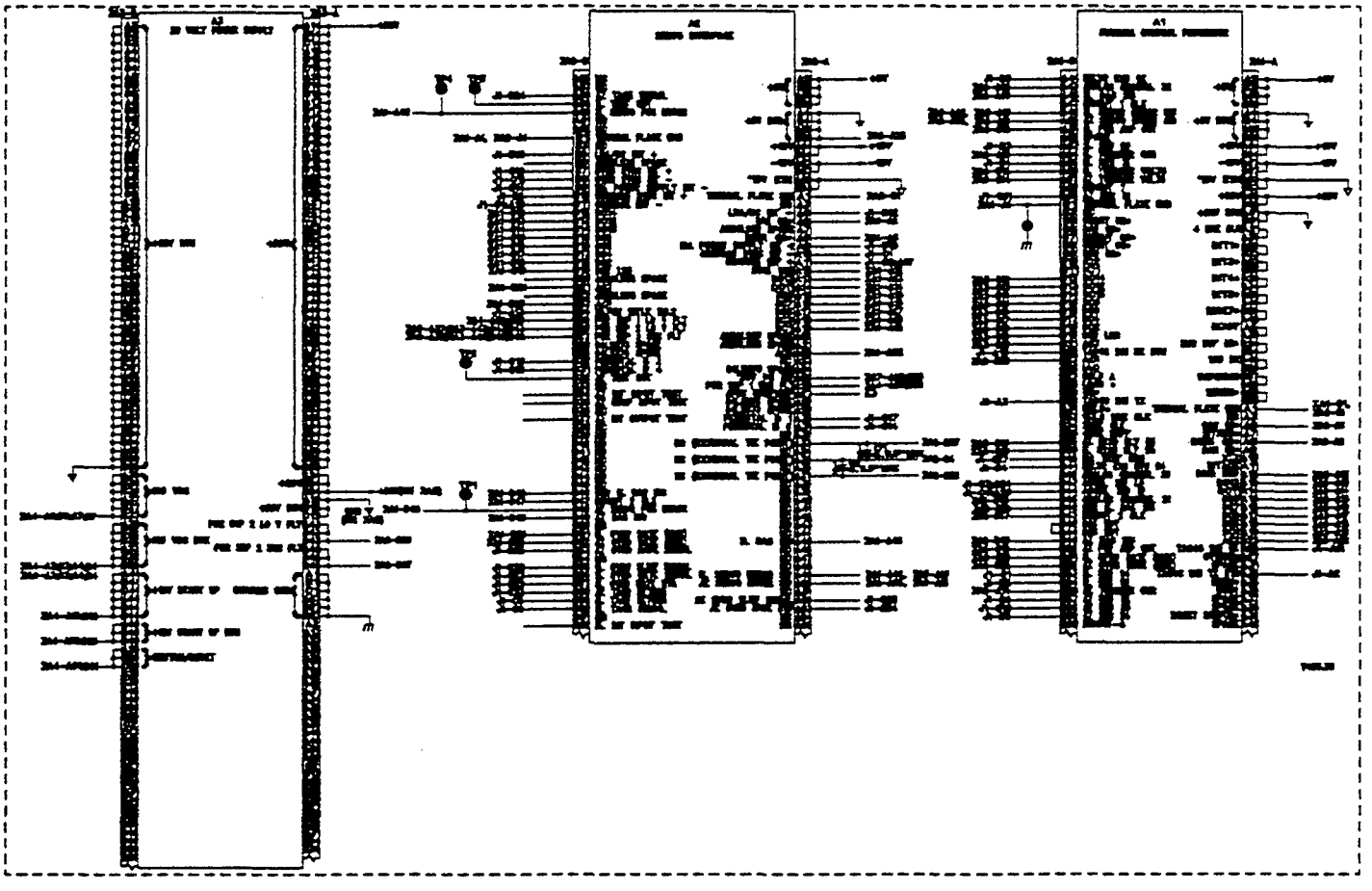
10.2.6 Output IslandDraw



10.2.7 Output IGESView



10.2.8 Output X-Change



11. Appendix C - Detailed SGML Analysis

11.1 Parser Log

11.1.1 First Pass Log

```
            SGML Document Type Definition Parser
                An SGML System Conforming to
              International Standard ISO 8879
            Standard Generalized Markup Language

Log file: '9475.LOG'
SDO File: 'ctndecl.sdo'
Namecase General is yes.
Namecase Entity is no.
Parsing DTD file: '9475.dtd'
Parsing DOCTYPE TM

DTD0137: Incorrect token ']]>'.  Parser Ignoring Input Up To Next MDO.
         In declaration: '<!['.
         In declaration: '<!DOCTYPE'.
         in entity 'atos'
         in line 47 in file 'c:\xgml\bspec.dtd'
         in line 103 in file '9475.dtd'
DTD0019: DOCTYPE or LINKTYPE end found in external entity file.
.DTO file not created due to parsing errors.

Program status code: 19.
```

11.2 Exoterica Validator Parser

```
<!-- **Warning** in "c:\xgml\bspec.dtd" (entity "%BSPEC"), line 1,
     used in "\xgml\9475.dtd", line 176:
   An element with mixed content should permit data characters ("#PCDATA")
   everywhere.
   The element being declared is "WARNING".
   <!ELEMENT warning   - - (title?, (%txt; | para | list)+) >
<!ATTLIST (warni
                                                              /\
-->
<!-- Capacity points/limits:
      TOTALCAP =64335/200000
      ENTCAP   =13120/200000
      ENTCHCAP =3729/70000
      ELEMCAP  =3840/70000
      GRPCAP   =23072/70000
      EXGRPCAP =896/70000
      EXNMCAP  =3872/70000
      ATTCAP   =5984/200000
      ATTCHCAP =315/70000
      AVGRPCAP =9248/70000
      NOTCAP   =96/70000
      NOTCHCAP =163/70000
      IDCAP    =0/70000
      IDREFCAP =0/70000
      MAPCAP   =0/70000
      LKSETCAP =0/70000
      LKNMCAP  =0/70000
--><!-- 1 warning reported. -->
```

12. Appendix D - Detailed CGM Analysis

12.1 File D001C001

12.1.1 Parser Log MetaCheck

```
MetaCheck Version 2.10 -- CGM/MIL-D-28003 Conformance Analyzer
Copyright 1988-93 CGM Technology Software
Execution Date: 06/20/94     Time:  16:54:56

Metafile Examined    : i:\94075\c001.cgm

Pictures Examined    : All
Elements Examined    : All
Bytes    Examined    : All

======================== Trace Report ========================

Tracing not selected.

============= CGM Conformance Violation Report ==============

No Errors Detected

========== CALS CGM Profile (MIL-D-28003) Report ============

No profile discrepancies detected.

================ Conformance Summary Report =================

MetaCheck Version 2.10 -- CGM/MIL-D-28003 Conformance Analyzer
Copyright 1988-93 CGM Technology Software
Execution Date: 06/20/94     Time:  16:54:58

Name of CGM under test: i:\94075\c001.cgm
Encoding              : Binary

Pictures Examined    : All
Elements Examined    : All
Bytes    Examined    : All

BEGIN METAFILE string : >esdcau<
METAFILE DESCRIPTION  : >AUTO-TROL/REL-1.0 MIL-D-28003/BASIC-<
                        >1<
```

Picture 1 starts at octet offset 124: >esdcau<

Conformance Summary : This file conforms to the CGM specification.
This file meets the CALS CGM Profile (MIL-D-28003).

Summary of Testing Performed and Errors Found:

1 Pictures Tested
97 Elements Tested
1528 Octets Tested

```
==================================
|    No Errors Were Detected     |
==================================
```

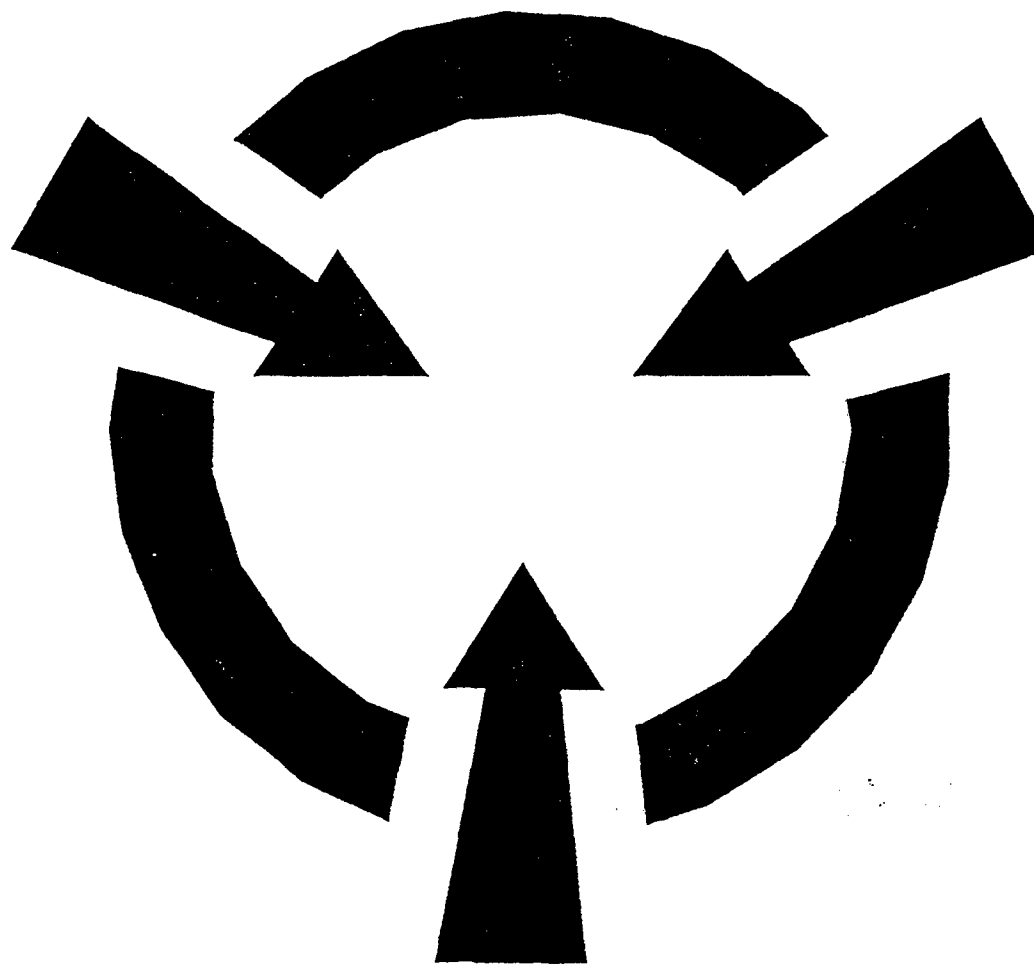
================ End of Conformance Report ==================

12.1.2 validcgm Log

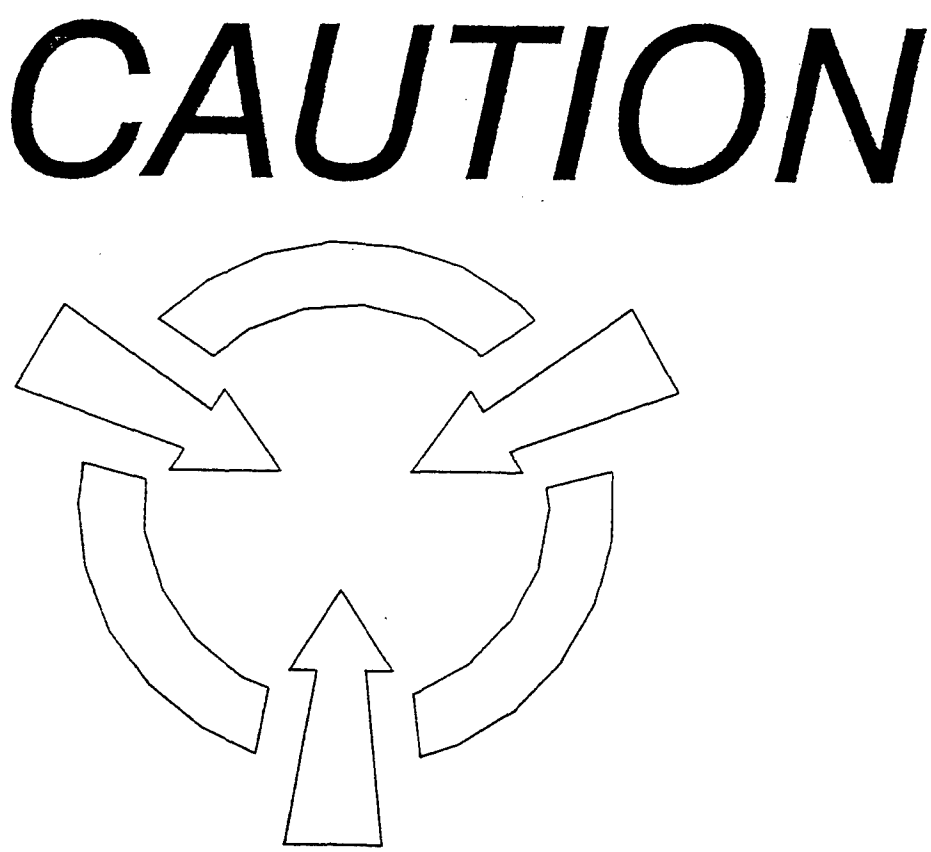
```
Analysis for file c001.cgm using table table
(0, 1) occurred 1 time
(0, 2) occurred 1 time
(0, 3) occurred 1 time
(0, 4) occurred 1 time
(0, 5) occurred 1 time
(1, 1) occurred 1 time
(1, 2) occurred 1 time
(1, 7) occurred 1 time
(1, 8) occurred 1 time
(1, 9) occurred 1 time
(1, 11) occurred 1 time
(1, 13) occurred 1 time
(2, 1) occurred 1 time
(2, 3) occurred 1 time
(2, 4) occurred 1 time
(2, 5) occurred 1 time
(2, 6) occurred 1 time
(2, 7) occurred 1 time
(4, 1) occurred 40 times
(4, 4) occurred 1 time
(4, 7) occurred 6 times
(5, 3) occurred 2 times
(5, 4) occurred 1 time
(5, 10) occurred 1 time
(5, 14) occurred 1 time
(5, 15) occurred 1 time
(5, 16) occurred 1 time
(5, 18) occurred 1 time
(5, 22) occurred 1 time
(5, 23) occurred 1 time
(5, 28) occurred 1 time
(5, 30) occurred 1 time
(5, 34) occurred 20 times
```

12.1.3 Output Freelance

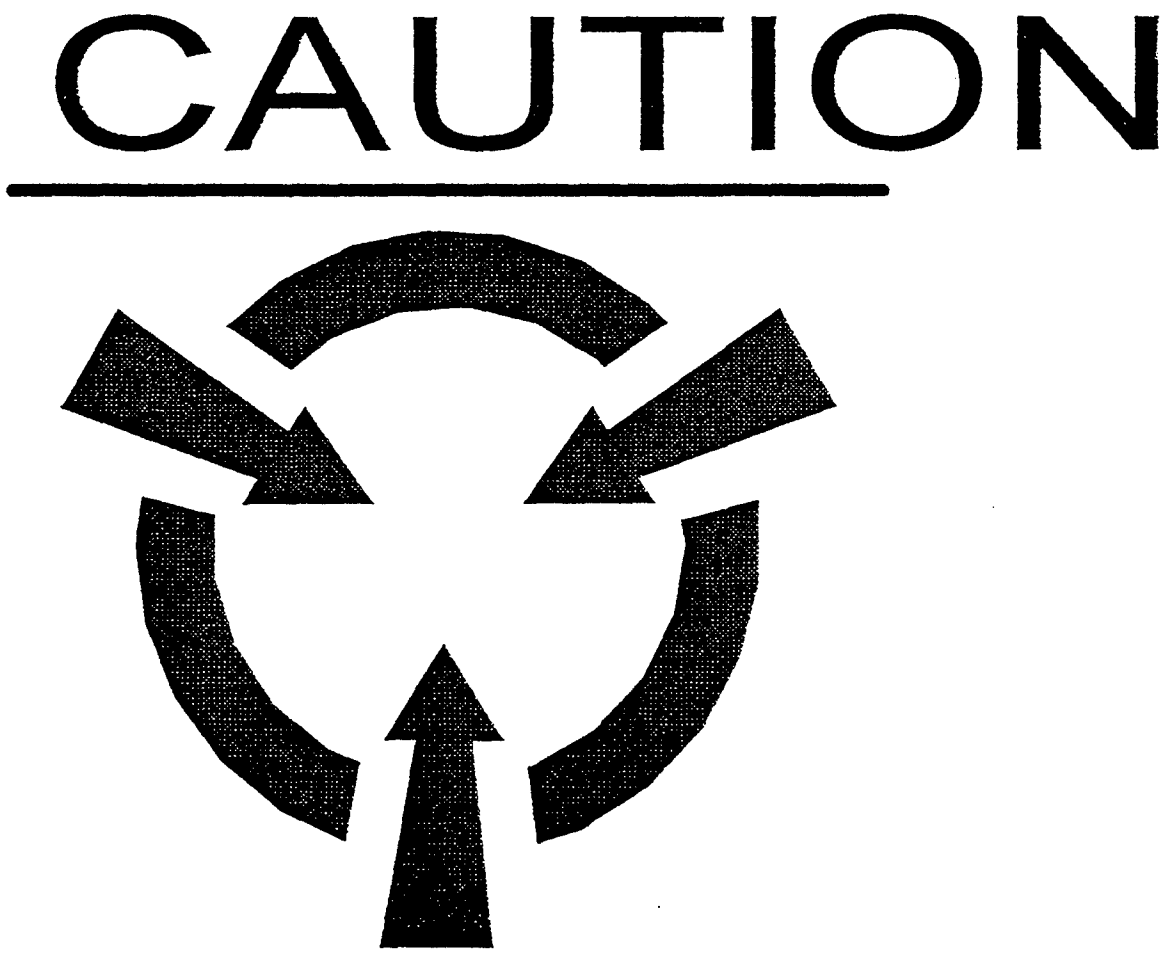
CAUTION



12.1.4 Output Harvard Graphics



12.1.5 Output HiJaak Pro



12.1.6 Output Ventura Publisher

CAUTION